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ABSTRACT

The first of two parts, the narrative report examines vocational education programs and is based on State and Federal records and other sources. A summary of the report is presented and two recommendations are directed to Congress regarding the lack of coordination between vocational education and manpower training and the lack of progress towards a solution to this problem. The state of vocational education through 1973-74 is analyzed based on enrollment, expenditures, completions and placements, instructional personnel, manpower. An assessment of the impact of vocational education research and demonstrations is presented according to the following categories: Federally administered research, State administered research, Federally administered exemplary programs, and State administered exemplary programs. The quality of information supplied by the States have improved over the last four years with the use of computers for processing data. A discussion of the present status of information systems is presented on a national and State-by-State basis. Appended materials include: (1) national summary of vocational education (1971-1974); (2) 1974 national data on vocational education teacher shortages, assignments, and career education; (3) a paper on measuring the impact of research and demonstration projects; (4) State management information processing data; and (5) definitions of vocational education terms. (Author/EC)

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Learning a Living Across the Nation vol. 4

PART 1: NARRATIVE REPORT

PROJECT
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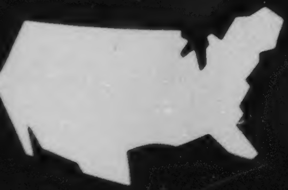

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LEARNING A LIVING ACROSS THE NATION
VOLUME IV

PROJECT BASELINE
FOURTH NATIONAL REPORT
Baseline Year: 1973-74 (Fiscal Year 1974)
Part 1: Narrative Report

Prepared For

THE NATIONAL ADVISORY COUNCIL ON VOCATIONAL EDUCATION

By

Arthur M. Lee, Project Director
NORTHERN ARIZONA UNIVERSITY

December 1975

Northern Arizona University
Flagstaff, Arizona

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MAR 22 1976

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Project Baseline
Northern Arizona University
Flagstaff, Arizona

Employment of Vocational Education Grads Holds Up In Recession Year, Baseline Study Reports

"At a time when the economy was at a relatively low point, and jobs were more difficult to get . . . , almost the same percent of former Vocational Education students found jobs [in 1974] as in the preceding year," says Arthur M. Lee, Director of Project Baseline and author of the report.

"Ninety-two percent of those available for work at the post-secondary level were employed, 90.38 percent at the adult level, and 88.57 percent at the secondary level," Lee says. "These figures are higher than for comparable age groups in the total population, and for minority groups substantially higher."

Learning a Living Across the Nation, Volume 4, like its predecessor has two parts, a Narrative Report and a Statistical Almanac. "Most of the data show an upsurge in Vocational Education in 1974 as compared with the previous year."

Lee noted that in 43 States more than half of all secondary students were enrolled in Vocational Education courses or programs. "A few years ago it was only forty percent, and when the VEA of 1963 was passed it was less than twenty percent."

"Total Vocational Education enrollment nationally," Lee says, "reached 13.5 million, up from 12 million the year before."

Expenditures were also up, according to the report, "but inflation took its toll."

"Total reported expenditures exceeded 3.5 billion, half a billion more than the year before." However, the report contains data which show that "most of the increase was absorbed by inflation."

One glaring exception to an otherwise favorable report was a shortage of Vocational Education teachers. "More than 40 States were reporting shortages ranging from minor to severe, and State directors were calling the situation critical, rampant, and desparate."

Dr. Lee, who has warned of this development in previous Baseline reports, declared: "It is doubtful if any other single component of Vocational Education was so hopelessly out of balance, and apparently remains so."

Vocational research and demonstration are examined in a separate chapter of this Baseline volume, and the results, Lee says, are impressive.

"More than 90 percent of the research and exemplary projects in Vocational Education have evidently had some impact on local schools and students . . . . roughly one-fourth led to widespread implementation including schools and school districts in other States."

The report also examines the kinds of information coming out of Vocational Education programs across the country, as Baseline has done each year since its inception. The results are viewed with guarded optimism.

"The knowledge most States have about their Vocational Education programs is still severely restricted to the narrow limits and often ambiguous requirements of Federal reporting, but it is substantially better than four years ago and improving rapidly."

Recommendations in the first chapter are aimed directly at Congress under two headings. The first is to end the confusion between Vocational Education and other manpower programs by putting them all under a single administration, a newly created "Department of Education and Manpower."

The second is essentially to make the Vocational Education Act of 1963 and the Amendments of 1968 work the way Congress intended. There are 17 suggestions for remedial action.

This is the fourth in a series of national reports issued by Northern Arizona University, Flagstaff, Arizona, from Project Baseline for the National Advisory Council on Vocational Education under contract with the U. S. Office of Education.

A limited number of copies of Vol. 4, Parts 1 and 2, are available by addressing Project Baseline, 6502 N. 35th Ave., Phoenix, Arizona 85017.

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INTRODUCTION

This is the fourth in a series of annual Vocational Education reports directed to Members of Congress and their professional staffs. It is also intended to be useful to officials and staff in the U. S. Office of Education and State education agencies, to national and State advisory councils on Vocational Education, to faculty and administrators in educational institutions, to vocational educators and students, and to the general public.

It is based primarily on official State records, but presents these with other materials in an effort to show a clearer and more complete picture than the records themselves. The series began when the Appropriations Committees of Congress requested more information than they were getting from the Federal reporting system.

Much of the statistical data in the Baseline reports comes from the same Federal reporting system, but with several additions and three important differences.

The additions. Detailed manpower training enrollment and allocation data had never been made available before even by the U. S. Department of Labor but were included in the first three Baseline reports. They are omitted from Volume 4 only because, under the new Comprehensive Employment and Training Act, manpower training contractors are no longer required to give the government more than summary reports. When these data were available through the Baseline reports, they enabled government officials and the public to make comparative judgments about Vocational Education and manpower training enrollments and costs, and to some extent their impact on the employment market.

Many of the States collect more data about their programs than they are required to report to the Federal Government. Baseline collects these data and publishes the additional information when they are available from enough States to make them significant. Thus, in Volumes 1 and 2 industrial arts and general business enrollments in 30 States the first year and 15 States the second year, when added to Vocational Education, indicated that about three-fourths of all secondary school students were receiving some kind of skill or occupationally related training. The Federal reports now include industrial arts enrollment, but these are seventh and eighth grade junior high as well as high school students, while Project Baseline's data were for grades nine through twelve only.

In Volumes 3 and 4 membership figures in vocational youth organizations have been reported by Baseline. The second volume included the percentages of labor market demand supplied by Vocational Education and by manpower training, and the third volume included Vocational Education labor market demand supplied by occupational clusters. In the third volume, also, tables were published showing State variations in contact hours of vocational instruction programs at each level, methods of collecting follow-up data, a matrix of Vocational Education definitions, career education enrollment, data elements being collected through automated information systems, and estimated underreporting by the States of State and local expenditures for Vocational Education.

Project Baseline also collects from other sources additional data with a bearing on Vocational Education, and these are used in the analyses and interpretations in the Baseline reports. Population figures from the U. S. Bureau of the Census are used in reporting Vocational Education enrollments per 1,000 population in each of the States and nationally. Simple enrollment figures are otherwise meaningless when comparing States of widely varying populations. Population data also are used in comparing enrollments at the secondary and post-secondary levels within age groups. In reporting Vocational Education placement percentages, these are compared with national figures for the total work force and with age group and minority group segments supplied by the U. S. Bureau of Labor Statistics. Total school enrollment figures from the State superintendents' reports are used to provide a base from which Vocational Education enrollment is measured. As other data become available, they are similarly incorporated into the Baseline reports to provide a better understanding of what is happening in Vocational Education throughout the Nation.

From a research point of view, Project Baseline's principal addition to the Federal reporting system has been to find out and report what the data actually mean. Considerable effort has been made to determine how each of the various kinds of information reported originates, is communicated to the State agencies, and is assembled for the Federal reports. As a result, it is possible to place greater credence in some data than in others, i.e., duplicated enrollments compared with unduplicated enrollments, and Federal expenditures compared with State and local expenditures. It is also possible to use the data from some States with greater confidence than the data from others. Most significantly, it has been possible to trace the improving reliability of Vocational Education data from year to year both by categories of data and by individual States.

Perhaps the most helpful additional information provided by Project Baseline from the States' point of view is the State profiles. In the first volume these were both statistical and descriptive. In the second and subsequent volumes they have been entirely statistical, including all data for each State that have been collected from the States themselves and from other sources. In the third volume the data collected each year were compared showing annual percentages of change. This is done again in this volume, and bar charts have been added by States within regions, making it possible to compare a State's progress with neighboring States. These profiles have become quite extensive, and due to their size they are no longer included in the published reports. Each State receives its own profile, and the profiles are readily available to all other agencies and individuals on request.

The differences. There are three particularly important differences between data from the Federal reporting system in government publications and in the Baseline reports.

First, the data in the Baseline reports are not simply compiled in statistical tables. Unfortunately, the data required by the Federal reporting system are often imprecise and lacking in uniformity. This is due to ambiguous definitions and Federal guidelines in some cases, and to State and local differences in how they collect the data and what they choose to report. Baseline has no crystal ball with which to explore the processes of thousands of human minds in putting the data together. But, from knowing something of the steps taken and from applying an accumulating knowledge of what seems to be happening in Vocational Education nationally and in each State, it has been possible to make a number of fairly simple analyses and to interpret the results with some degree of reliability. The Baseline reports, then, attempt to report what is happening in Vocational Education in a way that has more meaning and perhaps more utility value than the statistics alone.

Secondly, the Baseline reports after the first year have contained annual comparative data. This was one of the principal reasons for the four-year study. Single sets of annual statistics give a series of static pictures. Vocational Education is changing. It has been changing and expanding substantially since 1963. It is in monitoring those changes and the expansion, and measuring them as much as possible that Project Baseline seeks to provide its greatest service.

This has proven a vastly more complicated effort than might be imagined. Wide variations among the States and from year to year appear in virtually every category. Lack of national uniformity of definitions and serious limitations in current Federal reporting forms create numerous problems. Yet it has been possible to find patterns in the data and in their fluctuations. It has been possible, and becomes increasingly so, to report not only what is happening in Vocational Education from year to year, but to relate this information to its socio-economic environment.

The third difference in Baseline data is that they include corrections and updating not found in the Federal publications. The process of Federal reporting goes on for months and even years after the annual deadlines set by the U. S. Office of Education. States are continually amending the data in earlier reports, and each year the data from a few States are received too late to be included in the annual Federal publications. Project Baseline, through its direct communications with the personnel in each State agency, has been able each year to publish later and more complete data than are found in the Federal publications.

Another element is that, in using these data for annual comparisons, Project Baseline is continually updating previous years' data. This means that analyses made from two or more years of data are more accurate -- sometimes substantially so -- than similar analyses based on annual publications by the U. S. Office of Education.

Finally, there are various kinds of unpublished Vocational Education data and information that Project Baseline distributes through an informal system of communications. The recipients are Federal and State agencies, Members of Congress, vocational educators, other research organizations, and interested groups and individuals. The data range from odd bits and pieces of information accumulated through constantly working with Vocational Education agencies and personnel to the experiences of other States in trying out new ideas. State agencies frequently consult with the Baseline staff while considering innovations and seeking answers to problems. It is a service that Project Baseline is pleased to provide, especially because it makes possible the dissemination of knowledge too specialized and too scattered for publication, and therefore not readily available except through a clearinghouse of this kind.

Each of the Baseline reports after the first is based to some extent on the previous ones. Yet each is different. Although they are volumes in a series, each is also complete in itself. A knowledge of the first three may be helpful in using the fourth, but it is not essential. This volume is intended, within the limitation of data available, to provide an understanding of Vocational Education leading up to and including the school year 1973-74.

The Fourth Year Report. Volume 4 is like the third in its division into Part 1, a narrative report, and Part 2, a statistical almanac. The first chapter, however, contains a narrative summary of the full report, rather than a list of principal findings. The chapter on State and Federal reporting deals in much greater detail with State information systems, rather than with the nature of the data being reported. Also included in this chapter is a list of definitions developed in the fall of 1975 by a task force of the National Association of State Directors of Vocational Education. It represents a major attempt to try to solve the problem of a lack of uniform reporting. The task force was composed of State directors, and of representatives of the U. S. Office of Education, the National Advisory Council on Vocational Education, Project Baseline, the Association of Chief State School Officers, and the National Association of Community Colleges.

Chapter IV is an update of the 1974 Baseline supplementary report on the impact of Vocational Education research. It was prepared by the member of the Baseline staff who co-authored the previous supplemental report, LaRue Miller. Its significance lies in a better knowledge of how much change and redirection have come from federally supported research. Research expenditures have come under increasing fire by critics as unnecessary, misdirected or both, at least partly because so little has been reported about the actual results of research.

Again, as before, the entire report is the product of literally hundreds of individuals -- State directors and their staff personnel, USOE officials, National Advisory Council members and staff, Members of Congress and their staffs, professional consultants, and a great many interested persons who have written or telephoned or visited the Project baseline offices offering suggestions and information.

All of the production of Part 2 and every statistical detail in Part 1 have been the responsibility of the Project Administrator, Dorris Fitzgerald, assisted by Toni Elliott in the Phoenix Baseline office. Much of the work in Chapter III on State information systems has been carried out by the project director of research, William Nightwine. All of the Baseline staff have contributed to the final result so extensively that the author's name appears on the title page only as the final contributor through whose hands the materials have passed.

CHAPTER I

Summary and Recommendations

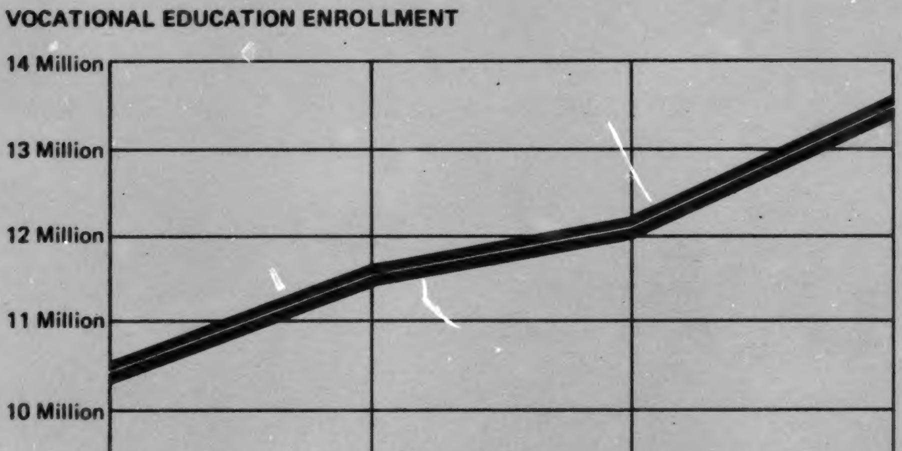
Summary

The information summarized here is presented in more detail in Chapters II, III, and IV. Page number references in the margin permit easy access to the additional detail, and at the same time direct the reader to the source data upon which statements in the summary are based.

Growth took an upswing in 1974.

Chap. II pp. 37-38

More than half of the secondary school students in 43 States from which data were available were reported to be taking Vocational Education in the school year 1973-74. The number had reached 40 percent several years earlier, but had never gone much higher. In the year 1972-73 there had been only a slight increase in total Vocational Education enrollment in all States, and the rate of increase was dropping. Then, in a year of sagging school enrollments, Vocational Education took an upswing.



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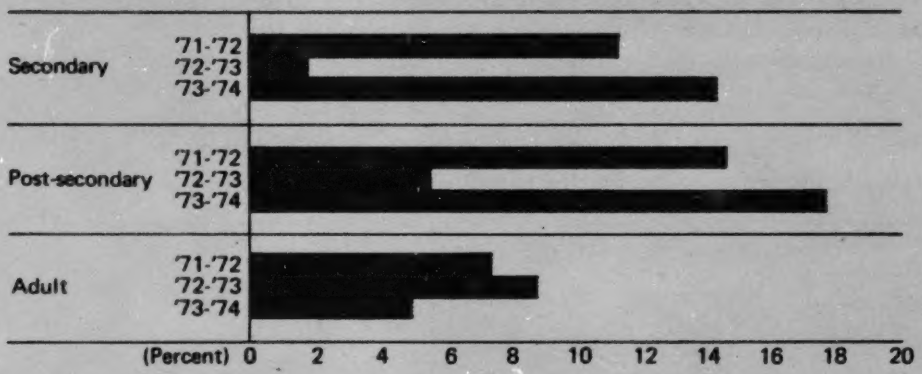
The total reached 13.5 million, up from 12 million the previous year. At the secondary level the rate of increase was 14 percent. It was 18 percent at the post-secondary level. Only adult enrollments registered a smaller increase than in the year before. And when it is remembered that secondary and post-secondary students are usually attending school full-time, while adults for the most part enroll in short courses on a part-time basis, a drop in the adult rate of increase is not as significant as a jump in the other two.


PERCENT OF CHANGE IN VOCATIONAL ENROLLMENTS

The only serious question about the 1973-74 growth of Vocational Education is how much of it was really skill training. Enrollment figures by occupational areas show only a seven and one-half percent increase. The difference between enrollment figures in occupational areas and total Vocational Education is, for the most part, in a category known as special programs. This includes group guidance (pre-vocational education), pre-post-secondary, remedial, industrial arts, volunteer firemen, and others who can't be classified elsewhere.

Chap. II
pp. 31-32

These programs contained three million students, an increase in one year of more than 60 percent. And while some of the students in special programs were also enrolled in regular occupational programs, there were nearly two million in group guidance alone -- pre-vocational education.

On the other hand, there are indications in the data that skill training for employment did accelerate in 1973-74. The 18 percent increase in post-secondary enrollment is primarily in occupational areas including students in new and emerging occupations.

In the 43 States where the percentage of secondary school students' in Vocational Education jumped in a year from 43 to 50, most of the special program enrollments in the lower grades had been eliminated before making that calculation.

As in previous years, the growth of Vocational Education was anything but consistent among the States. The rate of change in enrollments per 1,000 population ranged from an increase of almost 50[1] percent to a net loss of 22 percent. Among States that had reported

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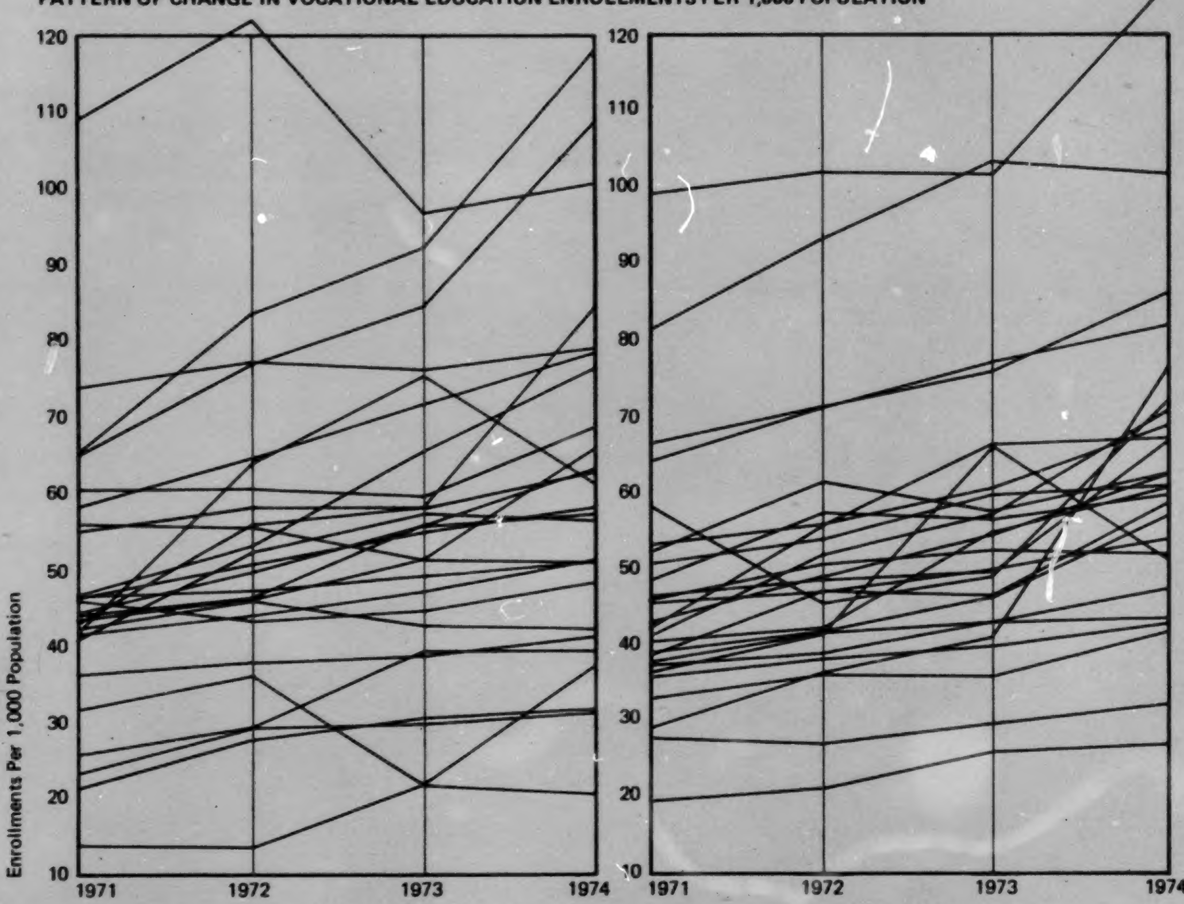
[1] Vermont and Missouri showed greater increases. However, Vermont reported 13,000 students in K-6 who had not been reported in previous Fiscal Years, and Missouri encountered reporting problems in FY 1973 that were corrected in FY 1974.

sharp increases the year before, the same pattern continued in some cases and was reversed in others. Some States with already high enrollments per 1,000 population increased substantially, others only slightly. The pattern was also erratic for States with relatively low enrollments per 1,000 population. However, an over-all pattern is evident. During four consecutive years of growth, individual States tended to maintain the same general position relative to each other in enrollments per 1,000 population, and the distance between the highest and lowest remained substantial.

PATTERN OF CHANGE IN VOCATIONAL EDUCATION ENROLLMENTS PER 1,000 POPULATION



ALABAMA–MISSOURI

MONTANA–PUERTO RICO

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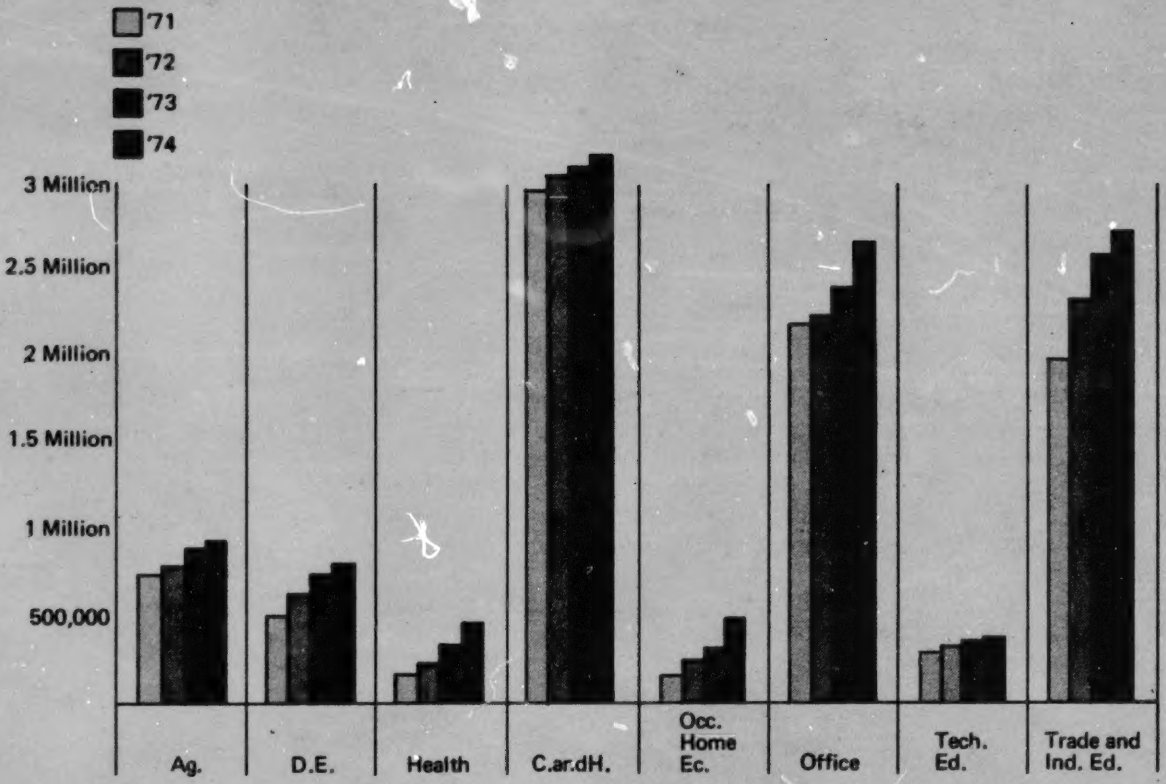
pp. 34-35

Occupationally, office occupations far out-distanced all other areas in net growth, followed by occupational home economics, then by trade and industrial. The highest rate of growth in 1973-74 was in occupational home economics, followed by health, distributive education, and office occupations in that order. The lowest rate of growth was in consumer and homemaking, which remained almost stationary. The most impressive growth in 1973-74 was in occupational home economics.



Based on data from 43 States the increase in Vocational Education enrollments was not matched by a similar increase in vocational youth group membership. In these 43 States, Future Farmers of America (FFA), had a substantial increase and became the largest group in the face of only modest growth in the enrollment of students in vocational agriculture.

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pp. 36-37

Expenditures increased, but inflation took its toll.

With States and local education agencies (LEAs) leading the way, the Nation's investment in Vocational Education was greater than in any previous year. Total reported expenditures exceeded $3.5 billion, half a billion more than the year before. In a year of increasingly tight school budgets, this could only have represented a growing interest in or demand for Vocational Education. At the same time, these expenditures fell far short of supporting a proportionate amount of Vocational Education. Most of the increase was absorbed by inflation. Under a formula for computing the effects of inflation since 1963, the value of Vocational Education funds in FY 1974 was less than half of what it would have been without inflation.

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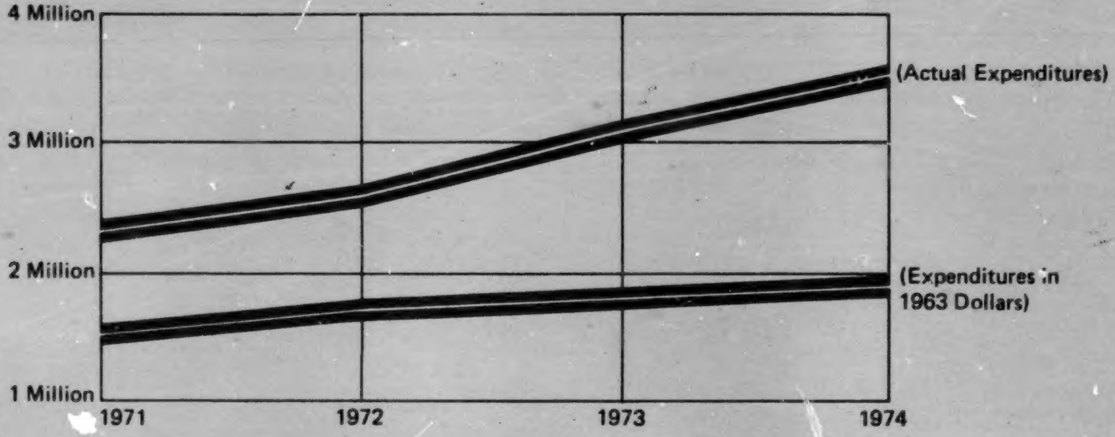
TOTAL EXPENDITURES AND EFFECT OF INFLATION



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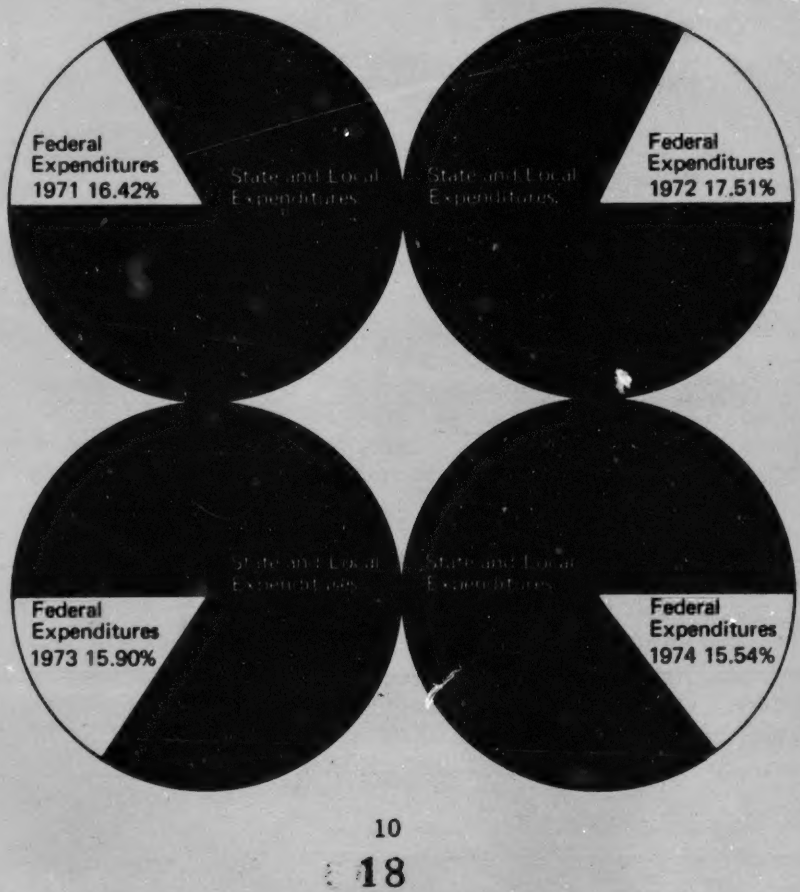
pp. 41-42

Under these circumstances, and probably others such as the need to serve increasing members of special groups, a direct relationship between increased expenditures and increased enrollments could no longer be assumed with any degree of confidence. The data over a 10-year period still suggest a pattern of sorts, but it is too uncertain in recent years to be accepted as more than very general.

The ratio of State and local expenditures to Federal funds for Vocational Education continued to increase in FY 1974, with the former



paying nearly five and one-half times as much of the total cost as the Federal Government paid. The cost per student appeared to decline at the secondary and post-secondary levels while increasing in the adult programs, but this is the result of a reporting problem rather than an actual situation. All costs are obviously increasing. Expenditures at each of these three levels probably increased as they had been doing for several years.

Chap. II
pp. 42-43

Relative expenditures for ancillary services -- administration and supervision, teacher education, research and demonstration, and curriculum development -- increased also. The result was that more than 90 percent of all Vocational Education funds (Federal, State, and local) were being used for program support alone, and less than 10 percent for improving the quality, planning, and relevance of the programs offered.

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pp. 45-46

Job placement in a recession year.

More than one million former Vocational Education students who had completed their programs in 1973-74 were reported employed in

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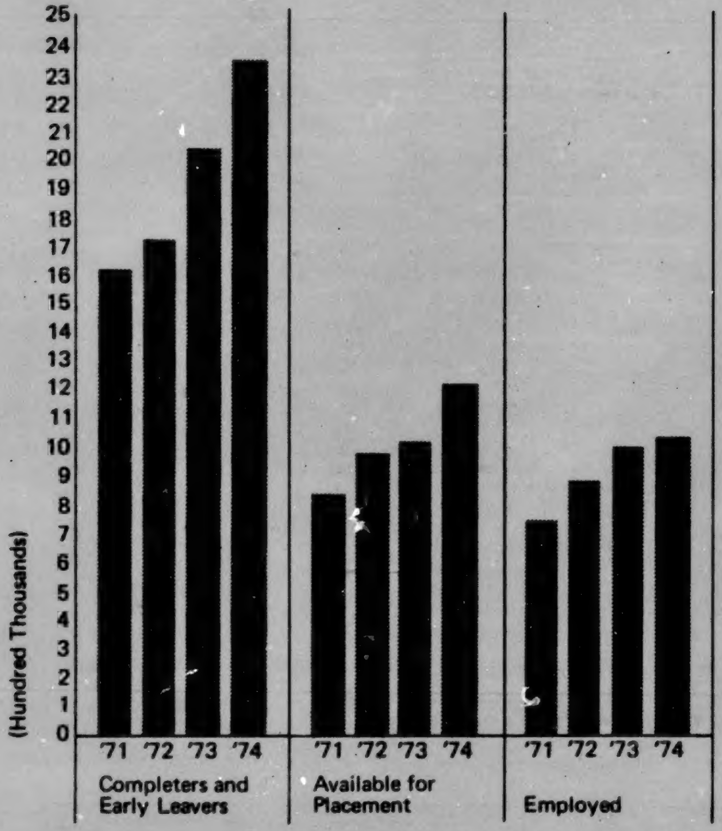


October 1974. This was 90 percent of all those who were available to work. It was only one percentage point less than the previous year. No other comparable employment rate held up as well, while growing numbers of the Nation's labor force were being laid off and jobs were hard to get.

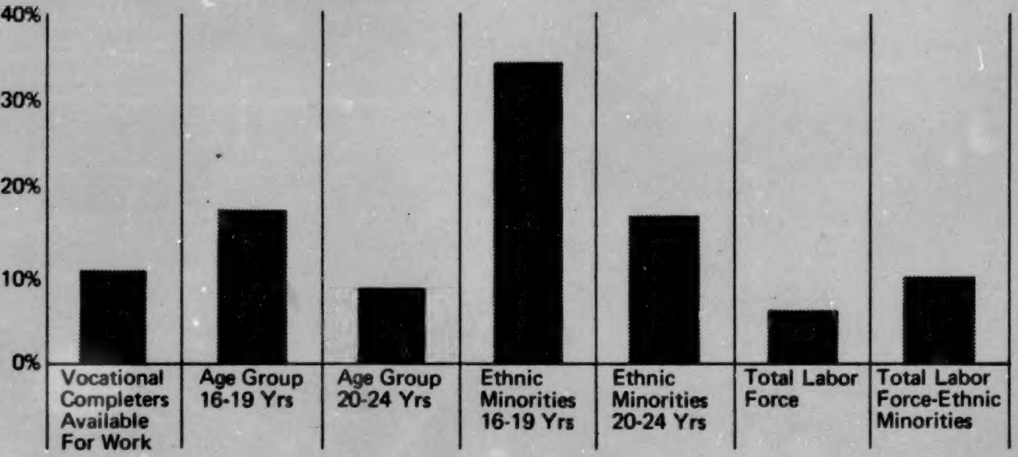
Chap. II
pp. 52-54

Turning it around, the Vocational Education unemployment rate increased by exactly one percentage point from what it had been one year earlier. The national unemployment rate for the entire labor force increased by 1.4 percentage points. The unemployment rate for Blacks[2] and other minorities increased by 2.5 percentage points.

The unemployment rate for former secondary Vocational Education students was 11.4 percent, an increase of 1.3 percentage points in a year. For the Nation's entire labor force in the age group 16-19 years, 17.1 percent were unemployed, up three percentage points. Blacks and other minorities in the 16-19 age bracket had an unemployment rate of 34.5 percent, an increase of 7.3 percentage points.

The unemployment rate for post-secondary Vocational Education students was 7.8 percent, an increase of 0.7 percentage points. In

NATIONAL UNEMPLOYMENT RATES 1974



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[2] In previous volumes Project Baseline has followed the USOE designation of persons of African descent as "Negroes." During the past year, however, a Federal inter-agency policy has been adopted changing the designation to "Blacks." The present volume uses the new designation in Part 1, while retaining the previous term in Part 2. The discrepancy is due to the time constraint of changing computer printouts for Part 2, and will be corrected in Volume 5.

the total labor force age group of 20-24 years, the unemployment rate was 9.4 percent, up 2.3 percentage points. For Blacks and other minorities in that age group it was 16.8 percent, an increase of 2.9 percentage points.

These figures reveal more about assessment and evaluation on the single point of job placement than any other data available. Many observers have argued for years that the results of Vocational Education should be measured by other criteria as well. But this is the test on which the Federal Government, and probably the public generally have been inclined to judge the effectiveness of skill training in the schools. The case for Vocational Education has frequently been attacked on the basis of a supposedly poor employment record, especially for secondary school graduates. The data here would seem to refute criticisms of that kind.

It must be said that these data can be questioned. Their collection and tabulation are by no means uniform throughout the Nation, and in most States they are supplied by teachers. Teachers, it is argued, can be expected to report their former students' employment records with a favorable bias. However, there are two answers to these arguments. One is that when States and teachers are unable to find out what has happened to certain former students, they are required to err on the conservative side by listing them as unknown. Some of those unknowns undoubtedly are employed, so the total Vocational Education employment figures may be too low.

The other answer is that a number of States using data supplied by teachers have run validation tests or audited the returns. The result has been, as far as is known, that the data have been well within the limits of statistical validity. Without additional information to the contrary, it may be assumed that Vocational Education teachers tend to be factual in their reporting, and this may well be the most reliable available source of such data.

The disadvantaged and handicapped status quo.

Whoever the students were who swelled the ranks of Vocational Education in 1973-74, they were not the disadvantaged and handicapped. Or if they were, they were not being taught in special classes or receiving special services. Their numbers in Vocational Education increased slightly, but as percentages of the total they dropped behind -- albeit only slightly. These groups, for whom Vocational Education under Federal initiatives in the 1968 Amendments is supposed to be providing special emphasis, are merely maintaining a kind of status quo.

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pp. 38-40

If it weren't for an extra effort at the secondary level, there would not even be a status quo; there would be an actual decline. Almost two-thirds of all Vocational Education students are enrolled in secondary school programs, but almost three-fourths of the disadvantaged Vocational Education students and more than three-fourths of the handicapped are enrolled at that level. Both percentages went up in 1973-74, while remaining almost stationary at the post-secondary level and dropping noticeably at the adult level.

Chap. II
pp. 43-44

Expenditures for these two groups dropped in FY 1974, due at least partially to new reporting procedures. In FY 1974 the same reporting problem that resulted in incomplete expenditure data by level had the same effect on expenditure data by purpose. If expenditures for the disadvantaged and handicapped went up at all, the increase was very small. Disadvantaged and handicapped students inevitably cost more to educate and train for employment than other students. When money is tight, as it was in FY 1974, the hard decisions that educators must make will lead to trimming costs wherever they can, especially per-student costs. As far as can be determined, States met their minimum Federal requirements of spending 15 percent of their Federal allotment for disadvantaged students and 10 percent for the handicapped. But apparently the States and local school districts found it increasingly hard to do more.

Cooperative programs and work-study still lagging.

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Here are to Vocational Education programs widely endorsed in theory but limited in practice. Both work-study and cooperative education did increase -- but at a snail's pace. In 1973-74 barely six percent of all secondary and post-secondary Vocational Education students were enrolled in cooperative programs. Slightly less than one-half of one percent were being supported in school through work-study.

Federal funds support both of these programs, and apparently the States and local schools have pretty well let the Federal Government carry the load. Again because of the general fund shortage, that is not hard to understand. But the result is less effective Vocational Education for a great many students who could benefit substantially if these programs were expanded. The goal of providing Vocational Education "which is of high quality" to all persons who need it or can benefit from it remains unobtainable under the circumstances.

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Cooperative enrollments appear to be concentrated in three occupational areas -- distributive education, trade and industrial occupations, and office occupations. About one-third of all cooperative students were found in distributive education. But this was only 194,000 students, out of 833,000 in that area altogether. One-fourth of the cooperative students were in trade and industrial programs -- but this meant only 155,000 out of nearly three million. In office occupations there were 127,000 cooperative enrollments, compared with a total of 2.76 million in such programs. Other occupational areas ranged downward from 34,000 cooperative students in agriculture and 30,000 in health, to 10,000 in technical education and 3,000 in consumer and homemaking.

The shortage of teachers.

With a national slump in the teacher job market, the number of full-time equivalent Vocational Education teachers at the secondary level increased nine percent in 1973-74. At the post-secondary level the increase was nearly 15 percent. In neither case was it enough, as enrollment growth outdistanced the additional supply of teachers. Over a period of three years the number of Vocational Education teachers had increased by more than 50,000, but the number of vocational students had increased three million. More than 40 States were reporting shortages ranging from minor to severe, and State directors were calling the situation "critical," "rampant," and "desperate."

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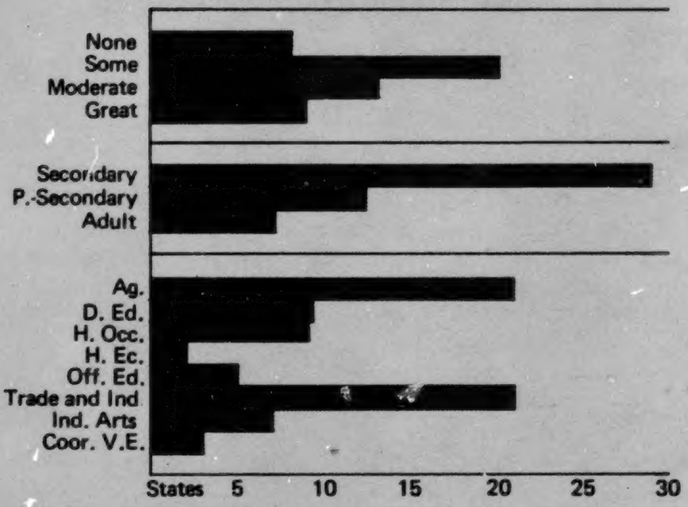
NUMBER OF STATES REPORTING VOCATIONAL EDUCATION TEACHER SHORTAGES



It was worst at the secondary level but still much in evidence in post-secondary institutions and in adult programs. The occupations most affected were agriculture, and trade and industrial occupations; distributive education, health occupations, and office occupations were also reporting shortages in a number of States.

The future looks even worse, judging from the number of persons enrolled in vocational teacher education programs. In the same year that saw student enrollment go up 12 percent, preservice teacher training increased only one percent. It is doubtful that any other single component of Vocational Education was so hopelessly out of balance, and apparently remains so.

The problem in regard to vocational counselors is improving. Over half of the State vocational agencies report both vocational and regular counseling personnel. The educational counseling profession is paying increasing attention to vocational and career guidance, and

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improvement is being made. Nevertheless, the extensive and specialized knowledge required to provide beneficial assistance to all students, and even to vocational students alone, is too much to expect of the average educational counselor. More vocational counselors are clearly needed.

In half the States vocational teachers serve unofficially as counselors, which may be good for their own students but not likely to do much for anyone else. The decision of any student to enter a particular vocational program, or concerning the career-related choices involved in selecting any course or program, should be made with a great deal of knowledge available about the possible results of those decisions and the alternatives. For a large number of students in the Nation's schools today, it is doubtful that this kind of assistance is available.

Manpower data not available.

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Fiscal Year 1974 was a transitional year for manpower training from a variety of programs established in the early 1960s to the new Comprehensive Employment and Training Act (CETA). Some programs still in operation were allowed to complete their contracts, while others were discontinued or transferred to CETA. New CETA programs were just getting under way, with 403 prime sponsors approved at an expenditure level of $1.33 billion. Data such as numbers of trainees, occupations, and trainee characteristics are not available because the Department of Labor requires only summary reports from prime sponsors. The total number of persons who received skill training through the manpower training programs in 1974 appears to have been less than in the year before, when it was under 500,000.

Research and demonstration make a difference.

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More than 90 percent of the research and exemplary projects in Vocational Education have evidently had some impact on local schools and students. It might have been only the adoption of a concept or product in a single school, or the first of several steps toward the answer to a problem. At least a third of the projects accomplished no more than this. But one-half to two-thirds of all research and exemplary projects produced results used in at least several schools within a State, and roughly one-fourth led to widespread implementation including schools and school districts in other States. In a few cases education systems in other nations have adopted the products of American Vocational Education research.

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No specific kinds of research and demonstration seem to have had the greatest impact. An individually scheduled cluster curriculum was developed and packaged in one project. The packaged curricula were integrated into local school programs through media centers throughout the State. Sixteen original media centers trained at least three teams each from schools in their areas, and these teams were then used to train personnel from other schools. Sixty-four centers are now in operation, and both the concept and the curricula of occupational cluster instruction designed to fit each student's own rate of achievement have spread throughout the State. This project cost $183,535.

Another project which cost $360 was simply a survey to find out if there was a need in one school for a prerequisite or remedial course in mathematics for trade and industry students. The results of the survey led to a summer dropout prevention program including tutoring that later expanded into a first semester program with 140 students each year. At this time over half of the State's sixteen post-secondary school districts have developed similar programs in mathematics, and programs in other areas are now being developed.

These are only two examples selected at random which do not begin to illustrate the wide variety of research and demonstration projects carried out with Federal support under Parts C and D of the Vocational Education Act. A few of the titles suggest their diversity: "Fusion of Applied and Intellectual Skills;" "Manpower Projection Model System;" "Career Education Needs Information System;" "Identification of Competencies in Food Service;" "Occupational Experiences of High School Graduates;" "A Program in Developmental Vocational Guidance (K-12) and Occupational Preparation for the Changing World of Work;" "Environmental Technology Instructional Training Project."

Altogether in the two- to three-year period examined by the Baseline staff, there were more than two thousand research and demonstration projects conducted throughout the United States supported by Federal funds. They are divided into four categories: federally administered Part C research, State-administered Part C research, federally administered Part D exemplary, and State-administered Part D exemplary. Some of them inevitably fail to produce useful results; if they were all successful, they could hardly be considered research. But why are some more successful than others?

If the answer to this is in their technical design, or the amount of money spent, or the length of time, or even the professional credentials of the staff, it has not been possible to identify any of these as common elements. The most apparent characteristic of the more successful projects is an intangible element: the enthusiasm and personal commitment of the project director. Other elements found to be common in most successful projects, and usually missing in the least successful, were the support of local school administrators, evaluation procedures built into the project, and the involvement of local teachers and administrators.

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The most serious problem for researchers and exemplary project directors, especially the latter, was delay and uncertainty of Federal support. Appropriations acts were invariably late during the period examined, and this created staffing and scheduling problems which in retrospect would have seemed insurmountable. Generally, it was felt by those responsible for the results of Vocational Education research and demonstration that the Federal Government could do three things to improve the quality and product of their efforts:

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(1) provide for more thorough advance planning; (2) allow more lead time at the beginning and phase-out or transition time at the end, and (3) build evaluation procedures into each grant, including benchmark data from which to measure results, and feedback data during project operations.

Better data processing is improving vocational information.

The knowledge most States have about their Vocational Education programs is still severely restricted to the narrow limits and often ambiguous requirements of Federal reporting, but it is substantially better than four years ago and improving rapidly. The biggest improvement is in the use of computers in processing student enrollment and follow-up data. Forty-one States are now processing at least part of their data by computer, and eight more are planning to do so within two years.

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The biggest advantage of computers, next to accuracy, is their versatility in relating various kinds of data. Twenty States, for example, can report not only the numbers of females or Blacks enrolled in Vocational Education, or students enrolled in nursing programs, but the number of Black female students enrolled in nursing. They can do this with every occupational program offered in the State, and for all ethnic groups.

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Sixteen States can do this with an additional breakout of disadvantaged and handicapped. They know how many disadvantaged are enrolled in any particular program and how many of these are also members of a particular ethnic minority and also male or female. Most of these States can report which programs are most successful in placing each minority group in jobs when they complete their Vocational Education, and what the dropout rate of disadvantaged students is in one program compared with another.

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Twelve States have automated management information systems (MIS) that contain all of the above detail for cross-referencing plus the home ZIP code of each student. Their computers can tell them not only that Spanish-surnamed American students are enrolled in particular courses, but that they are primarily from rural, or suburban, or inner city communities. State and local administrators use this kind of information in correcting imbalances of ethnic or disadvantaged enrollment in particular programs, such as agriculture in an inner city school. They use it to better match the needs of particular kinds of students in particular kinds of neighborhoods with particular kinds of training for particular kinds of occupations which best meet their needs as well as the needs of the employment market. At any rate, the knowledge and the capability.

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Much less progress has been made by the States in getting accurate, complete financial information. Almost invariably the expenditure data they report are compiled from grant applications or reimbursement forms rather than expenditure records. They include most direct costs, but few if any indirect costs. In most cases the cost data can be broken out by occupational area, such as agriculture or trade and industrial, but not by occupational program, such as agricultural mechanics or sheet metal work. In the great majority of States it is not yet possible to know the cost per student or cost per hour of instruction in any given program.

This information is available in two States, however, and for parts of the Vocational Education program in several others. The advantages in program management are obvious. Comparative analyses of program costs by occupational program, geographical area, level of instruction, and kinds of students served make planning more realistic and administration more effective. The dead weight of manual bookkeeping systems has so far prevented most States from realizing these benefits, but they are possible and could be brought about in a reasonably short time. The significance of the steps taken toward developing cost data is not in national impact of progress made, but simply that it has begun.

Uniform definitions on the way.

For years Vocational Education has meant one thing in one State and something else in another, with 52 separate definitions possible, counting the District of Columbia and Puerto Rico. Students who are reported as adults in some States are reported as post-secondary in others. Secondary Vocational Education includes grades 9-12 in a few States, 7-12 in many others, and K-12 in others. Disadvantaged and handicapped are fairly well defined, but students who are reported as disadvantaged in one State are reported as regular students in another.

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Appendix E

A major effort is under way to overcome the problems. The National Association of State Directors of Vocational Education this year established a task force to standardize the definitions so that they are at least satisfactory to the Federal Government and most of the States. Forty-five terms have been thoroughly re-examined and new definitions written, beginning with Vocational Education itself. The ambiguities are gone. Sometimes the cherished meanings of terms long used by particular States or institutions are also gone. The result is a set of definitions which, if adopted by the States and the Federal Government, will greatly improve the precision of Vocational Education information and thus its quality.

Recommendations

Congressional response to previous Baseline recommendations.

Sixteen recommendations altogether have appeared in the first three annual Baseline reports. Several of these have appeared more than once, and others dealt with similar problems but focused on different issues. They can be summarized under five headings: (1) Better coordination -- including Federal support -- between Vocational Education and manpower training; (2) Greater equalization of opportunity to receive Vocational Education; (3) Greater emphasis on particular program features (post-secondary, teacher education, facilities and equipment, occupational cluster training, and career education); (4) More uniform and realistic definitions, and (5) A better information system.

Key Members of Congress and their staff assistants feel that progress has been made or is being made in all of these areas except the first.[3] The new CETA programs are being coordinated with Vocational Education in some States, but generally the two seem to have few points of contact. It is a situation that Congressional leaders feel must still be corrected, but individual opinions range from that of no great urgency to a strong feeling in agreement with Project Baseline's 1974 recommendation that: "The Federal Government should re-examine its spending priorities within the total budget limitations as these affect Vocational Education, manpower, unemployment and welfare."

Previous recommendations involving greater equalization of opportunity to receive Vocational Education include one in 1973 to look into the reasons for some States showing performance records considerably better than others, and one in 1974 that "The new Federal legislation scheduled for 1975 should contain provisions which make it possible, and even mandatory, for States to equalize Vocational Education opportunities for all youth and adults." It is generally recognized, although Baseline has very little data to prove or disprove, that opportunities for Vocational Education in terms of kinds of programs and quality of instruction vary considerably among school districts and geographic areas within many States. They vary among groups of youth and adults also -- minority groups, males and females, and the disadvantaged.

Congressional support for the goal expressed here is probably stronger than on any other point in the Baseline recommendations. Some progress has been made under the 1968 Amendments, it is felt, but not enough. It is recognized that inadequate funds have been an obstacle. Nevertheless, provisions strengthening this effort may be expected in the new Vocational Education legislation currently under consideration by Congress.

The recommendations for greater emphasis on particular program features have a mixed reaction among Congressional leaders, but there is a noticeable inclination to let the States make their own decisions. In the case of secondary or post-secondary emphasis, the strongest expression favored emphasizing secondary programs.

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[3] Conferences during the week of September 29-October 3, 1975, with the Chairman and ranking minority Member or their staff directors of the Senate and House Education Subcommittees and Appropriations Subcommittees for Labor and Health, Education and Welfare.

Members of Congress and their staff assistants were aware of the problems of ambiguous and unrealistic definitions, and of the need for better information, but these are details they expect the U. S. Office of Education and State administrators to take care of. One staff director has under the glass top of his desk a printed statement that expresses this: "A senator wants to know what time it is. He does not want to know how the watch works."

Recommendations based on four years of data.

Project Baseline will limit its recommendations this year to two fundamental considerations.

One is the lack of coordination between Vocational Education and manpower training, and the failure of both Congress and the Executive Branch to make any significant progress toward a solution in spite of efforts by both to do so.

The problem is much greater than the complete absence of any comparable training, completion, job placement, or cost data for these two programs in FY 1974. Both Vocational Education and manpower training are supposed to be based on the needs of the employment market; yet a current Baseline supplemental report, "Vocational Education Planning in the States", and another current Baseline report, "Vocational Education Report to the Nation", show that reliable employment market data at the State and local levels are almost unobtainable.

Even the Department of Labor's role as a training agency is becoming obscure under the Comprehensive Employment and Training Act (CETA), with an increasing emphasis on employment and welfare rather than training. Meanwhile, the major group of persons who need the training CETA is supposed to be offering, unemployed and underemployed adults, are not being served much more adequately by Vocational Education. It seems from the Baseline data that, while Vocational Education has the experience and the ability needed to greatly expand its adult training programs, it does not have the money. CETA has considerably more money, but is using it for services other than training.

Under these circumstances, Project Baseline has concluded that a measure frequently discussed, and introduced in both Houses of Congress each year for a number of years, should be enacted. In itself, it would not be a guarantee that existing problems of coordination would be solved. It would, however, restructure the Executive Branch of the Federal Government in such a way that solutions could be more readily identified and carried out. This recommendation also appears in a parallel Baseline study, "Vocational Education Report to the Nation", after an examination of Vocational Education within its socio-economic context.

Recommendation No. 1: Pending Congressional legislation creating a Department of Education and Manpower should be enacted into law.

The second recommendation is multi-faceted. Again and again throughout the Baseline study, data have shown that significant progress has been made toward achieving the purposes of the Vocational Education Act of 1963 and the Amendments of 1968. At the same time, problems and failures in administration of the Act's provisions at the Federal, State, and local levels could often be traced to problems or inadequacies either in the Act or in the annual appropriations under it.

This is not to say that all problems and failures could in any sense be traced to the Federal legislation. Project Baseline has pointed out in previous reports a number of inadequacies in the Vocational Education programs as they were being conducted and administered, with responsibility for correction in the administrative agencies. Nevertheless, the staff and advisors of Project Baseline have concluded that this year our attention should be concentrated on what improvements should be made in the Federal legislation. Congressional action, we believe, would help in overcoming the most important problems and failures that Baseline data have shown to exist.

A single recommendation seems most appropriate, with suggestions for implementation. The suggestions are offered merely for consideration -- different approaches may be equally feasible. The recommendation is based on the total accumulation of data that Project Baseline has been able to obtain and examine during four years of research.

Recommendation No. 2: The purposes identified in Section 101 of the Vocational Education Act of 1963 and the Amendments of 1968 should be reaffirmed; and provisions of the Act intended to carry out these purposes should be strengthened, or new provisions added, so as to insure that the intent of Congress will be achieved within a reasonable period of time.

For the benefit of the reader, the purposes in Section 101 are listed below, followed in each case by suggestions of ways to strengthen current legislation or of new provisions to add. The sequence of parts in the fourth purpose has been rearranged from the way it appears in the Act for better continuity of discussion.

1. "Maintain, extend, and improve existing programs."

Data from each of the States have shown that this purpose is being achieved, at least to the extent that resources are available. It continues to remain as important today as it was in 1963. Improvement, however, comes about in only two ways: systematic research and development, or accidental change. There was widespread agreement in 1963 that the extent of changes, new directions, and expansion expected of Vocational Education would require a proportionate commitment to research and development. In 1968 this commitment was reaffirmed, with a provision that such funds should be divided between national projects and research needs in the States. The commitment has not been fully kept, but the record of accomplishment is impressive.

Suggestion: Retain Part C of the Act, providing for the continued division of support between national research administered by the Commissioner and State research including research coordination units.

Suggestion: Remove the provision in the Act under which 10 percent of the appropriations for Parts B and C must be used for Part C, and include a separate authorization of appropriations for Part C of not less than $35 million in FY 1977, $50 million in FY 1978, and an increase each year thereafter in proportion to the increased authorization for Part B.

Suggestion: Add a provision that requires each State receiving funds under Part C of the Act to use such funds for State and local research and demonstration according to Federal standards to be developed by the Commissioner.

This last suggestion is based on the observation that apparently research expenditures like Part B and other Vocational Education expenditures produce uneven quality in different States. Some degree of Federal supervision would be beneficial in assuring both greater uniformity of quality among the States and an opportunity for better coordination between State and national projects.

The Baseline study, "Vocational Education Report to the Nation", also recommends continuation of the research provision under a separate authorization, including "that the administrative authority for vocational education research remain with the Bureau of Occupational and Adult Education, U. S. Office of Education."

2. "Develop new programs of Vocational Education."

This purpose is also being achieved, as shown by Baseline data.* It remains important because technology continues to change and because other purposes of the Act will require additional new programs.

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*See especially the Project Baseline supplementary report The Impact of Vocational Education Research at the Federal and State Levels (1974), and Chapter III of this report.

Suggestion: Retain Part I of the Act authorizing Federal support funds for curriculum development.

"Vocational Education Report to the Nation" has a more detailed recommendation that merits consideration: "It is recommended that the Congress include in the pending vocational education legislation a specific authorization for curriculum development with no matching funds required. It is further recommended that the Congress designate priority areas to be addressed, with curricula for new and emerging occupations and for vocational teacher education stressed. It is further recommended that the Bureau of Occupational and Adult Education, U. S. Office of Education, be the administering agency for the vocational education curriculum development program."

3. "Provide part-time employment for youths who need the earning from such employment to continue their vocational training on a full-time basis."

Baseline data show that each year this purpose has had only minimal achievement, probably far below its potential. Project Baseline suggests that Congress take two actions to correct the situation and increase the opportunity of those in financial need to benefit from Vocational Education.

Suggestion: Increase substantially the authorization of appropriations under Part H, work-study programs for Vocational Education students.

Suggestion: Broaden this provision of the Act to include other support services such as health care, transportation, and maintenance support not covered by part-time earnings; broaden student eligibility requirements to include those twenty-one and older; and remove wage and employer restrictions to permit greater flexibility within the actual needs of individual students.

The second suggestion would have the effect of making Vocational Education opportunities comparable to those in the CETA program for persons of all ages and in any kind of part-time employment.

4. "Ready access to Vocational Education training or retraining which is of high quality, ..."

Project Baseline has been unable to obtain data on quality, because neither the data nor the means of obtaining them have been developed beyond isolated examples in a few States. An assumption can be made on the basis of indirect evidence, such as employment rates of Vocational Education students, that training of a high quality does exist. An assumption can also be made, on the basis of uneven employment rates in different States and local school districts, that there is training of less than high quality.

The intent of Congress seems clear, but there is no way now of knowing if and to what extent that intent is being realized. The legislation is inadequate on this point, and unless it is strengthened, the reference to high quality becomes merely an exercise in semantics.

Suggestion: *Include a provision under Part C of the Act establishing as a high priority the use of research and demonstration funds at both the State and national levels to develop competency measurements in all Vocational Education programs, State and national norms for all programs, and State and local reporting of competency levels achieved by geographic area (urban, inner city, suburban, rural), age, grade level, sex, disadvantaged, handicapped, and ethnic group*.

It would be pointless to require any reasonable accounting of quality in Vocational Education until after the research and development work is done, and this is a very substantial task. It would not be feasible to proceed to accounting for quality until the reporting procedures had been researched and developed. If Congress makes this a top-level research and demonstration priority, then assures that adequate funds are provided to carry it out, quality accounting will at least be feasible. This part of the fourth purpose should perhaps be a condition of Federal support, but quality must first be defined and compared.

4. (continued) *"... which is realistic in the light of actual or anticipated opportunities for gainful employment, ..."*

Project Baseline has very little data from which to know the extent to which this part of the purpose has been achieved. There are several indications that at best vocational training is related to opportunities for employment on a haphazard basis. Reliable data on current and projected labor market needs are almost completely lacking.[4] State and local planning, while required to be based on such data, must be based instead on more tangible factors such as resources available and student interests. One important segment of Vocational Education, consumer and homemaking, cannot be based on opportunities for gainful employment.

Suggestion: *Add a provision to the Vocational Education Act establishing an on-going needs assessment function at both the national and State levels, and authorize appropriations to carry out this function at each level*.

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[4] This is not only the conclusion of other Baseline reports dealing more directly with the problem. A recent study by former Labor Secretary Willard Wirtz and former Bureau of Labor Statistics Administrator Harold Goldstein confirms it in these words: "The estimates of both employment and unemployment currently being relied on to initiate ... various programs on a State and smaller basis and to distribute multibillion dollar appropriations are simply not reliable." Wirtz and Goldstein, *A Critical Look at the Measuring of Work*, p. 25, Washington: The National Manpower Institute, August 1975.

The Baseline supplemental study "Vocational Education Planning in the States" recommends "provisions for insuring that adequate planning data are available in each State," and "provide for a comprehensive needs assessment and annual up-date in each State." The Baseline study "Vocational Education Report to the Nation" recommends "that national manpower projections be produced jointly by the Department of Labor and the Department of Health, Education, and Welfare . . . and that funds be authorized and appropriated to the sole State agency for Vocational Education for the development of manpower studies and projections."

4. (continued) "... and is suited to [student] needs, interest, and ability to benefit from such training ..."

This part of the fourth purpose focuses on individual student needs, as the preceding part focused on the needs of the employment market. It is primarily a counseling function, and while Vocational Education counseling seems to have expanded considerably under Federal support legislation, it still has a long way to go. Baseline data reported in this volume indicate that for most students it is wholly inadequate.

Suggestion: Establish a separate authorization for Vocational Education counseling under the Act with substantial funds to provide for both the training of additional counselors and a portion of the support of Vocational Education counseling in secondary and post-secondary schools where the range of programs offered is sufficient to give students a variety of choices.

4. (continued) ... for "persons of all ages in all communities -- those in high school, ..."

Probably more success has been achieved in providing Vocational Education for secondary school students in all communities than most other purposes of the Act. Nevertheless, Baseline data indicate that achievement is spotty, better in some States than in others. There are numerous indications that availability of a variety of Vocational Education programs is greater in some communities than in others, and for some age groups compared to others. Nationally, only half of all high school students are enrolled in some kind of program identified as Vocational Education, while 80 percent will need vocational and technical skills in their careers. It can only be assumed that many high school students are not enrolled in Vocational Education programs because the programs they need are not available to them.

Suggestion: Increase the authorization of appropriations for Part B of the Act to $750 million in FY 1977, $850 million in FY 1978, $1 billion in FY 1979, and an additional $150 million each year thereafter until 80 percent of all secondary school students and corresponding minimum percentages of post-secondary students and unemployed or underemployed adults are enrolled in Vocational Education programs.

Suggestion: To maintain or exceed the current ratio of State and local to Federal expenditures for Vocational Education, while at the same time recognizing that some States and communities can afford comparatively higher expenditures than others, develop a new formula, including both population and economic indices for distribution of Part B funds to each State.

Suggestion: Instead of the present requirement that State and local expenditures increase each year for States to be eligible for Federal support funds, compute what each State's allotment would have been for the fiscal year preceding the first fiscal year under the new formula, the ratio of this amount to State and local expenditures for that fiscal year, and require as a condition of eligibility that State and local expenditures each year thereafter equal or exceed the amount necessary to maintain that ratio as a condition of eligibility.

These suggestions are technical and complex, with many ramifications. They are based on two observations derived from Project Baseline data. The first is that while increased Federal support may or may not stimulate greater increases in State and local expenditures, it is apparently needed to bring Vocational Education opportunities to all students who need training. The second is that requiring each State to show an annual increase has not worked well. The suggestion to use economic as well as population indices in the State allotment formula is to provide an element of equity that does not now exist.

It is only after very serious consideration that Project Baseline recommends substantially increasing Federal support of Vocational Education. The need to curtail Federal expenditures rather than expand them, to reduce the scope of Federal commitments, and move toward a national program of fiscal responsibility is a reality that overrides other considerations of the government. With these observations in mind, we still recommend a substantial increase in Federal expenditures for Vocational Education, for two reasons: (1) Funds spent for this purpose may be expected to increase the productivity of the American people and strengthen the economy, resulting to some extent in both increasing tax revenue and decreasing expenditures for public assistance; and (2) The actual amounts now being spent, and the increase recommended, are relatively quite small compared with numerous other items in the Federal budget.

Another critical element in making Vocational Education available to persons of all ages in all communities who need it is teachers. Data in this report indicate that shortages are already widespread and getting worse. There is no possibility of maintaining either the quality or extent of Vocational Education, much less expanding opportunities for training to more students, unless this situation is remedied.

Suggestion: Add a provision to Part F of Title II -- Vocational Education Leadership and Professional Development Amendment of Higher Education Act of 1965, as amended -- under which preservice Vocational Education teacher trainees may be assisted in their educational programs through partial payment of tuition, subsistence, transportation, and other costs.

Suggestion: Increase the appropriations authorized for this part of the Act to $200 million annually.

This action might be designed to bring a measure of relief to two imbalances which now exist. One is the shortage of qualified Vocational Education teachers; the other is a relatively high level of unemployment of teachers in other areas.

A little imagination in carrying out the suggested support program should make it possible for unemployed mathematics, English, science and other academic instructors to be retrained as Vocational Education teachers. It might require additional working experience in the occupational fields to be taught, but this could become part of their education for which Federal assistance would be provided. Some teachers would already have work experience in an occupational field. Support funds could also be used to assist experienced persons in various occupational fields to change their careers and become Vocational Education teachers.

4. (continued) "... those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, ..."

This part of the fourth purpose applies to adult Vocational Education students, not a level of education. While many of them are in post-secondary institutions, many others are in evening programs or even daytime skill centers of secondary schools. Their needs are particularly acute, yet they are often victims of confusion in Federal programs that provide substantial funds for support services but relatively little for training.

Suggestion: Add as a provision of the Vocational Education Act an amendment to the Comprehensive Employment and Training Act requiring that CETA prime sponsors use Vocational Education services for training to the full extent of their availability.

Suggestion: Amend the Act further to include under CETA separate authorizations of appropriations for training and for support services.

Baseline data as well as unemployment statistics indicate serious problems in providing adequate occupational training and retraining for adults. The separate Baseline study "Vocational Education Report to the Nation" recommends that "Congress strengthen adult vocational and continuing education in pending Vocational Education legislation; [and] that the recommended requirement for comprehensive planning include ongoing assessments of the needs of out-of-school youth and adults; ..."

4. (continued) "... those with special educational handicaps, ..."

These are the disadvantaged and handicapped students who, under Federal legislation "cannot succeed in the regular Vocational Education program ... because of their handicapping condition". Some progress has been made toward achieving this part of the fourth purpose, but the language of the Act has also created a dilemma and perhaps inhibited State and local efforts to accomplish more. The dilemma is that only students requiring special assistance or separate classes are being identified with Vocational Education, while there is an increasing professional viewpoint among rehabilitation specialists that such persons should be placed in regular classes and perhaps not given special identity at all.

The intent of Congress is clear and proper, but some State and local vocational educators have encountered serious difficulties in trying to carry it out. Many students object to being classified as either disadvantaged or handicapped, and will avoid programs in which such labels are attached to them. The statistics showing disadvantaged and handicapped enrollments as percentages of total Vocational Education enrollment, and annual enrollment increases are disappointing. A number of such students may be receiving Vocational Education as regular students, and may be receiving special attention simply because training programs are designed to meet the individual needs of each student. Under these circumstances it is difficult to know the extent to which this part of the fourth purpose is being achieved. Project Baseline assumes it is somewhere between what the statistics show and what Congress intended.

Suggestion: Modify the definition of disadvantaged and handicapped students in Section 122 of the Act, which authorizes special support funds for such students, to include those in regular classes who qualify under criteria determined by the Commissioner.

Suggestion: Change the provision under which minimum percentages of Federal grants to the States must be used for disadvantaged and handicapped students to a separate authorization of appropriations for these purposes.

With a separate authorization, Congress can review and determine each year the relative emphasis being given to providing Vocational Education for the disadvantaged and handicapped.

There is one other aspect about this purpose which Congress seems not to have taken into consideration in previous legislation, entirely aside from the extra cost: The disadvantaged and handicapped are often more difficult to train and more difficult to place than regular students. Current program assessment and evaluation, on the other hand, are based almost exclusively on placement records. To concentrate funds and effort to any great extent on disadvantaged and handicapped students pulls down the total record of achievement. There is almost certainly a natural tendency in many schools to try to attract good students rather than students with problems.

Suggestion: Add a provision to the Act that would require the Commissioner to collect enrollment, completion, and placement data for each Vocational Education program from each State by disadvantaged, handicapped, and regular student, by ethnic group, and by sex; and to establish national norms for each group.

With this kind of information, both the States and Congress would be in a far better position to know what is being done for special groups, what can be done, and what may be in the national interest to attempt to do.

4. (continued) "... and those in post-secondary schools." A considerable amount of achievement has been realized in this part of the fourth purpose, especially through the rapid expansion of community colleges. Reliable data are not available on the percent of post-secondary students who should be enrolled in vocational-technical programs, and such a ratio would be quite different for two-year institutions than for four-year colleges and universities. Post-secondary Vocational Education has grown so rapidly and in such a variety of institutions that realistic objectives have hardly been feasible, and some kind of quantitative goals are needed.

Suggestion: Include in Part C of the Act, as a national research priority, the development of information from which percentages of post-secondary students whose careers will require technical training can be determined and periodically updated.

Another approach would be to determine the percentage of all persons in the population age group 18-24 years whose careers will require a post-secondary technical education.

Suggestion: Include a provision in Part B of the Act requiring that funds be distributed in each State by an allocation formula that takes into consideration: (1) the current ratio of secondary to post-secondary vocational/technical enrollment; and (2) the effort required to provide 80 percent of all secondary students with Vocational Education compared with the effort required to provide a given percent (to be determined by each State Board) of all post-secondary students with technical education.

The Baseline study "Vocational Education Report to the Nation" recommends "that the Congress emphasize the need for post-secondary vocational education programs, as well as secondary programs, and that a formula be developed to assure that federal funds are not arbitrarily allocated by levels of education."

CHAPTER II

Vocational Education Through 1973-74

Enrollment

Did Vocational Education continue to expand in 1973-74 as it had in previous years?

Part 2
Tables 1,9,
38-45

Enrollment increased and there was a sizable jump in the rate of increase. Total Vocational Education enrollment was 13,512,060, an increase of 12 percent over 1972-73. Enrollment per 1,000 population increased from 56.72 to 62.97, a growth rate of 11.02 percent.

The surge of new Vocational Education students was evident at the secondary level, but the rate of growth was highest at the post-secondary level. Adult Vocational Education increased but at a lower rate than in the preceding year.

	Enrollment[1]		Annual Growth Rate	
	1972-73	1973-74	1972-73	1973-74
Total	12,064,761	13,512,060	4.20%[1]	12.00%
Secondary	7,348,666	8,387,026	1.90%	14.13%
Post-secondary	1,349,465	1,591,400	5.64%	17.93%
Adult	3,366,630	3,533,634	8.97%	4.96%

A note of caution is suggested in drawing conclusions from the 1973-74 growth rate, particularly at the secondary level, which has more than five times as many Vocational Education students as post-secondary and therefore accounted for most of the total growth rate. The reason for caution is that enrollments in special programs[2] reported under Vocational Education by the States, counting only those included in total Vocational Education enrollment figures[3], increased 55.92 percent over the previous year. Most of these appear to have been at the secondary level.

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[1] Some data for previous years in this Report do not agree with figures published in previous Baseline reports. This is because statistics for those years were subsequently submitted by some States.

[2] Group guidance (pre-vocational education), pre-post-secondary, remedial, industrial arts, volunteer firemen, and other not elsewhere classified.

[3] Seven States in 1972-73 and nine in 1973-74 are known not to have included special program enrollments in their total Vocational Education figures. Others included only certain categories in their final figures, and in several cases it is not known whether they were included or not.

Most of the special programs did not provide occupational training, although there were probably some students enrolled in both training and non-training special programs who are included in these figures. Two special programs were added to the USOE report forms for the first time in 1973-74. Those were industrial arts and volunteer fireman training, which account for nearly one-third of the total special program enrollments that year. Some industrial arts students were previously reported in one or another of the Vocational Education categories, but probably not most of them.

One category under special programs showed an enrollment increase of 76.65 percent in 1973-74 over the previous year, the catch-all column labled "Other, Not Elsewhere Classified." Counted here were students who were not classified in an occupational category, and were not in group guidance, pre-post-secondary, remedial, industrial arts, or volunteer fireman programs. A number were probably receiving training in new occupational programs or new combinations of them not yet classified by USOE, but the rest may have received little or no actual training.

In any case, it must be kept in mind that Vocational Education no longer serves only students being prepared for employment. It serves related programs and remedial programs, and quite possibly national enrollments are increasing in these at a greater rate than in the strictly occupational programs.

	1972-73	1973-74	Percent of Increase
Group Guidance	1,629,072	1,789,118	9.82
Pre-Post-secondary	6,590	15,568	136.24
Remedial	124,796	133,448	6.93
Industrial Arts	(Not Reported)	779,903	
Volunteer Fireman	(Not Reported)	112,591	
Not Elsewhere Classified	114,796	202,783	76.65
Total Special Programs[4]	1,875,254	3,033,411	61.76
Enrollments in Special Programs Not Included In Total V.E. Enrollment	809,507	1,360,902	68.11
Enrollment in Special Programs Included in Total V.E. Enrollment	955,267	1,489,486	55.92

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[4] The sums of the totals below will not equal the totals shown because each year several States report duplicated enrollments in the occupational areas, and it is not possible to determine whether the special program enrollment is included in the grand total. In FY 1973 there were 110,480 students, and in FY 1974 there were 183,023 students.

Was either the growth or the accelerating rate of growth uniform throughout the United States?

Neither was uniform, but a pattern does exist. Growth and rates of growth have varied considerably among the States each year, and except in occasional extreme cases they seemed to vary without regard to any identifiable explanation. When four consecutive years of data are compared, however, a pattern emerges of upward movement in which most States maintain fairly constant positions in relation to each other but are spread over a wide range of performance. Performance in this case means the number of persons served per 1,000 population.

In 1973-74, as in previous years, there were wide variations in the growth of Vocational Education within, as well as among, States. Seventeen reported increases of percent of change that were more than 10 percentage points higher than in the previous year; 13 of these were pendulum increases following decreases the year before, but four were not. Nine States had decreases in percent of change that were more than 10 percentage points below the previous year. Six of these were swinging back from increasing rates the year before; three had declining rates for the second consecutive year.

Vocational Education enrollment per 1,000 population increased in 43 States[5]. In 12 of them, the percent of change was more than 20 percent and in four of them more than 40 percent. They represent almost every geographic and economic sector of the country. Five States had half again as many Vocational Education students enrolled per 1,000 population in 1973-74 as in the Nation as a whole.

In spite of the generally widespread growth of Vocational Education, nine States reported decreases in their enrollments per 1,000 population, and it was the second consecutive year of fewer enrollments for two of them.

Of the 10 States lowest in rate of growth, six had nearly as many or more enrollments per 1,000 population as the national average, and one was fourth from the top.

The erratic nature of Vocational Education growth among the States in terms of enrollment per 1,000 population is shown below by listing the five with greatest growth in 1973-74,[6] five nearest the U. S. total, and five at the bottom of the growth scale.

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[5] For purposes of simplification, the District of Columbia and Puerto Rico are included as States in this report.

[6] Vermont and Missouri reported higher growth rates in 1974 than any of the States listed, but in both cases they were the result of changes in data conditions rather than actual growth. Vermont included 13,858 career education students (K-6) for the first time, which was more than a third of its total reported Vocational Education enrollment. Missouri had lost part of its enrollment the year before in a data processing accident, and when these were included in FY 1974 they produced an unnaturally high growth rate for that year.

	% Change in enroll. per 1,000 pop. FY 1973-74	Actual enroll. per 1,000 pop. FY 1974	% Change in enroll. per 1,000 pop. FY 1972-73	% Change in enroll. per 1,000 pop. FY 1971-74	% Change in enroll. FY 1971-74
Total U. S.	11.02	62.97	3.37	25.46	28.87
New Hampshire	46.68	71.36	6.64	22.44	30.04
Connecticut	43.64	84.16	3.17	93.34	94.53
Utah	38.78	127.16	-10.43	27.98	38.38
Puerto Rico	34.50	66.12	1.89	40.77	49.71
Florida	28.11	118.30	10.81	80.06	103.24
Oklahoma	12.73	47.56	2.88	17.90	21.97
Ohio	10.44	60.38	31.83	55.50	55.68
Tennessee	9.69	43.35	4.27	20.58	26.19
Pennsylvania	9.52	32.79	9.03	15.50	15.79
Georgia	9.24	78.53	11.03	34.56	39.55
Maryland	-1.61	56.09	7.38	38.08	41.57
Hawaii	-2.63	50.44	-7.09	-10.46	0.98
District of Col.	-7.72	20.07	50.41	35.61	33.93
Alaska	-16.79	62.86	17.21	48.75	60.62
Nevada	-21.82	51.44	58.10	40.62	55.52

Part 2,
Tables
46-53

In which occupational areas was the accelerating growth of Vocational Education most evident?

Office occupations led all other areas in terms of net growth in 1973-74, was third highest in growth rate, and second to occupational home economics in increase of growth rate over the year before. Occupational home economics, with an enrollment base of fewer than on-half million students, was second in net growth, and trade and industrial occupations was third highest. The lowest net increase was in consumer and homemaking education. Five occupational areas had lower growth rates than in the previous year.

	Enrollment		Net-Growth		Percent of Change	
	1972-73	1973-74	1972-73	1973-74	1972-73	1973-74
U. S. Total	12,064,761	13,512,060	486,152	1,447,299	4.20	12.00
Total in Occ. Areas[7]	11,154,631	11,985,686	759,232	831,055	7.30	7.45
Agriculture	927,141	975,623	31,275	48,482	3.49	5.23
Distr. Ed.	738,449	833,432	98,327	94,983	15.36	12.86
Health	421,008	505,897	84,397	84,889	25.07	20.16

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[7] Totals in occupational areas do not agree with total reported enrollments for two reasons: (1) They include some students more than once if they are enrolled in more than one area; and (2) They do not include students enrolled in special programs such as industrial arts, career education, and group guidance.

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	Enrollment		Net-Growth		Percent of Change	
	1972-73	1973-74	1972-73	1973-74	1972-73	1973-74
Consumer & Homemaking	3,186,476	3,202,761	23,744	16,285	0.75	0.51
Occ. Home Economics	322,696	495,978	43,578	173,282	15.61	53.70
Office	2,497,558	2,757,640	147,581	260,082	6.28	10.41
Technical	363,909	393,185	27,270	29,276	8.10	8.04
Trade & Ind.	2,697,394	2,821,170	303,060	123,776	12.66	4.59

How has the accelerating growth of Vocational Education affected cooperative and work-study programs?

Part 2
Tables
57, 58

Very little. Cooperative education enrollment represented only 6.07 percent of total secondary and post-secondary Vocational Education in 1973-74, just slightly higher than the year before. The rate of increase gaines only one percentage point in three years. Cooperative study -- supervised training on the job -- is generally considered to be one of the best ways of providing practical training while still in school, and there was plenty of support for it when the Vocational Education Amendments of 1968 were enacted. Something is holding it back, perhaps the lack of funds for sustained expansion.

Work-study was even less affected by the surge in Vocational Education enrollments. As a percent of total secondary and post-secondary Vocational Education it increased in 1973-74 by only 0.05 percentage point to 0.44 percent, up from 0.39 percent the year before and 0.37 percent the year before that.

There is no indication that either of these programs will overcome the relatively low percentages of enrollments that they have represented for the past four years.

Were there any noticeable changes in secondary and post-secondary cooperative education enrollments within occupational areas?

Part 2
Table 15

No. The percentage of cooperative education enrollment in each occupational area remained essentially the same as in the previous year, with slight decreases in agriculture, distributive education, occupational home economics, and consumer and homemaking. It increased slightly in health occupations, office occupations, technical education, and trade and industrial. There are only three areas in which cooperative education has become a relatively important part of the Vocational Education program. These are distributive education, with nearly a third of the students participating; trade and industrial occupations, with a fourth of the enrollment, and office occupations, with a fifth of the enrollment.

	Cooperative Education Enrollment		Percent of Total Cooperative Ed. Enrollment	
	FY 1973[8]	FY 1974	FY 1973[8]	FY 1974
U. S. Total	499,322	605,298		
Agriculture	30,442	34,387	6.10	5.68
Distributive Education	169,529	194,158	33.95	32.08
Health	21,014	30,500	4.21	5.04
Occ. Home Economics	27,565	28,453	5.52	4.70
Office Education	103,732	126,656	20.77	20.92
Technical Education	7,494	10,052	1.50	1.66
Trade & Industrial	113,896	154,849	22.81	25.58
Consumer & Homemaking	4,910	3,053	0.98	0.50
Other	20,740	23,190	4.15	3.83

Part 2
Table 8

Was membership in vocational youth organizations affected by the accelerating growth rate of Vocational Education?

No. Incomplete data from forty-three States indicate the percent of growth for these organizations in 1973-74 was slightly less than half that for Vocational Education enrollments. The largest group, Future Homemakers of America, declined in membership to second place; the next largest, Future Farmers of America, grew 5.64 percent to become the biggest. The two office occupations groups, Future Business Leaders of America and the Office Education Association, showed substantial increases, as did the Vocational Industrial Clubs of America.

	FY 1973 Membership[9]	FY 1974 Membership[9]	Percent of Growth 1973-74	FY 1974 Membership as a percent of V.E. Enroll. in Occ. Area
Total (43 States)	1,171,322	1,238,475	5.73	9.17
FFA	392,965	415,127	5.64	42.55

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[8] Figures for FY 1973 are available in Learning a Living Across the Nation, Vol. 3, Part 2.

[9] FY 1973 figures are available in Learning a Living Across the Nation, Vol. 3, Part 2. Figures include all States except Arizona, California, Connecticut, Delaware, D.C., Indiana, Kentucky, New Hampshire, New Jersey, and Wyoming, from which figures were not available for one or both years.

- continued -	FY 1973 Membership[9]	FY 1974 Membership[9]	Percent of Growth 1973-74	FY 1974 Membership as a percent of V.E. Enroll. in Occ. Area
FHA	413,233	406,967*	-1.52	12.71
HERO	675	4,160*	516.30	0.84
DECA	123,437	132,257	7.15	15.87
FBLA	77,314	86,215	11.51	4.39[10]
OEA	28,615	34,800	21.61	
VICA	135,083	158,949	17.67	5.63

What percent of all secondary school students were enrolled in Vocational Education in 1973-74?

Part 2
Table 6

In 43 States from which data could be obtained it was 50.37 percent. The year before it had been 42.6 percent in 43 States. As noted in previous Baseline reports, prior to the Vocational Education Act of 1963 the number had been 15 to 20 percent. Current figures include increasing numbers of pre-vocational and career education students in a number of States, but the data presented here exclude special program enrollments in all States where they can be identified separately.

On the basis of data available, therefore, the proportionate secondary Vocational Education enrollment does appear to be increasing in the occupationally related programs in addition to special programs. It had grown rapidly after 1963 until it reached a plateau of approximately 40 percent. During the first three years of Project Baseline research, the percentage ranged from 39 to 42. This jump to 50 percent in 1973-74 suggests another stimulus, possibly the economic recession, which made employment for untrained high school students more difficult than before.

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[9] FY 1973 figures are available in Learning a Living Across the Nation, Vol. 3, Part 2. Figures include all States except Arizona, California, Connecticut, Delaware, D.C., Indiana, Kentucky, New Hampshire, New Jersey, and Wyoming, from which figures were not available for one or both years.

[10] Future Business Leaders of America (FBLA) and the Office Education Association (OEA) both get their members from the office occupations programs.

*Part of the decrease for FHA, and the increase for HERO, was the result of occupational home economics students changing their affiliation from Future Homemakers of America to Home Economics Related Occupations.

Total Public School Enrollment Grades 9-12 (43 States)	11,352,814
Secondary Vocational Education Enrollment Grades 9-12 (same 43 States)	5,717,904
Percent of Total Secondary Enrollment	50.37

To the extent possible, these figures do not include enrollments in industrial arts or general business programs, many of which are also preparing students for skilled employment.

Part 2
Tables
10-13,
54-56

How well is Vocational Education continuing to serve the disadvantaged and handicapped?

The percentages of these students in total Vocational Education enrollments in both cases are going down. Actual numbers were up slightly in 1973-74 from the year before, but by relatively small amounts.

It may be that additional disadvantaged and handicapped students are actually receiving Vocational Education, but are not being counted because under the Federal statutes they must be in special classes or receiving special services. In view of the somewhat narrow definition of disadvantaged and handicapped vocational students, the figures here are probably lower than the actual numbers enrolled. It is unfortunate that data are not gathered on all disadvantaged and handicapped students in Vocational Education programs rather than on just those who meet the definition required by this particular law.

	1972-73	1973-74	Increase or Decrease
Reported Enrollment of Disadvantaged Students in Vocational Education	1,581,025	1,631,922	50,897
Percent of Disadvantaged Students in Total Vocational Education Enrollment	13.10	12.08	-1.02

- continued -

	1972-73	1973-74	Increase or Decrease
Reported Enrollment of Handicapped Students in Vocational Education	222,713	235,569	12,856
Percent of Handicapped Students in Total Vocational Education Enrollment	1.85	1.74	-0.11

Where are disadvantaged and handicapped students usually found in Vocational Education?

Part 2
Tables
11, 13

At the secondary level. This is where almost two-thirds of the reported Vocational Education students are enrolled, but the percentages of disadvantaged and handicapped at that level are even higher. Almost three-fourths of the disadvantaged students in Vocational Education, and more than three-fourths of the handicapped are at the secondary level.

Level	Total Voc. Ed.		Disadvantaged		Handicapped	
	1972-73	1973-74	1972-73[11]	1973-74	1972-73[11]	1973-74
Secondary	60.91%	62.07%	69.80%	72.70%	70.66%	77.86%
Post-secondary	11.19%	11.78%	11.68%	10.19%	13.52%	13.77%
Adult	27.90%	26.15%	18.52%	17.10%	15.82%	8.37

What percentages of Blacks and other ethnic minorities are enrolled in Vocational Education, and are these percentages increasing or decreasing?

How do males and females compare in Vocational Education enrollments?

Some of the States can answer these questions, but the U. S. Office of Education stopped collecting ethnic and sex data in FY 1973, so national information is not available. Beginning in FY 1975 the collection of sex data will be resumed by occupational area and ethnic data will be collected by level.

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[11] Disadvantaged and handicapped figures for FY 1973 are available in Learning a Living Across the Nation, Vol. 3, Part 2.

Totals alone are not enough, however, in the case of minorities and in examining equality of opportunity between the sexes. It is not only important to know the numbers and percent of a particular minority enrolled in Vocational Education at each level; the numbers and percentages of that minority in each occupational program or cluster should be known as a basis of comparison with other groups. The same is true of males and females and of the disadvantaged and handicapped. It seems particularly important that such data should be available for completions and dropouts, with and without employment entry skills, and for placement or unemployment following completion. Until these kinds of information are available nationally, and by geographic and economic areas, an adequate knowledge of the effectiveness of Vocational Education in serving various target populations is not possible.

Expenditures

Part 2
Table 64

Did Vocational Education expenditures continue to increase in 1973-74 as they had in previous years?

Yes, somewhat, but the actual gain was held to a fairly low level by inflation. Total reported Federal, State, and local expenditures for Vocational Education continued to increase but the rate of increase remained sluggish, as it had for the past two years.

	Total Reported Expenditures	Percent of Increase over Previous Year	Inflation Rate[12]	Actual Gain[12]
1971-72	$2,657,548,731	10.78	4.30%	6.48%
1972-73	3,030,657,492	14.04	3.30%	10.74%
1973-74	3,547,889,028	17.07	10.97%	6.10%

The 17 percent increase over FY 1973 would have been better than 14 percent the previous year, but with inflation reaching nearly 11 percent, the difference was considerably reduced.

Part 2
Table 73

What has been the effect of inflation on Vocational Education expenditures since 1963?

An increase of over 1,000 percent in expenditures has been reduced to 500 percent in buying power. Put another way, 1974 dollars purchased less than half of what they were expected to in 1963. Inflation has been both cumulative and, in 1974, accelerating. The cumulative effect can be shown by using a formula of one percent per year, reaching 11 percent from 1963 to 1974, which is the basis for the figures below. This is actually on the conservative side, especially in the early years, and just about on target in 1974.

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[12] Inflation rate taken from A-53, May 1975 issue of Federal Reserve Bulletin.

Fiscal Year	Total V.E. Expenditures	Percent of Increase from 1963	Purchasing Power in 1963 dollars	Percent of Increase from 1963
1963	$ 308,899,618		$ 308,899,618	
1968	1,192,862,965	286	1,030,633,602	234
1971	2,399,025,018	677	1,693,711,663	448
1974	3,547,889,028	1,049	1,883,929,073	510

Since FY 1968 expenditures increased just under 200 percent, but in 1968 dollars it was an increase of only 83 percent. Since 1971 the increase in expenditures has been nearly 50 percent, but in 1971 purchasing power only 11 percent. Vocational Education, like everything, is paying an increasingly heavy inflation cost from the Federal, State, and local funds being appropriated for its support and expansion.

Has there been a relationship between the annual growth of Vocational Education and annual expenditures?

Part 2
Tables
38, 64

In previous years similar patterns could be seen, but in 1973-74 there is some question. Total enrollment jumped from a 4.20 percent increase to a 12.00 percent increase, while the increase in expenditures went from 14.04 percent to 17.07 percent. Both went up, but something other than a modest increase in expenditures caused enrollment to show a sudden acceleration. Probably a relationship of some kind does exist, but the evidence by which it might be described is confusing at best, and to some extent the evidence was weakened in FY 1974.

It must be noted, of course, that these are raw data not considering the varying impact of inflation. It should also be realized that Federal reporting requirements do not succeed in getting complete expenditures from many States, and the amount of underreporting may vary from year to year. An 11-year comparison of expenditure growth rates and enrollment growth rates is informative but inconclusive.

Fiscal Year	Annual Rates of Increase[13]	
	Total Reported Expenditures	Total Reported Enrollments
1963	8.79%	3.55%
1964	7.73%	8.28%
1965	81.69%	18.93%
1966	32.29%	11.77%
1967	25.53%	16.10%
1968	18.80%	6.90%
1969	14.75%	5.91%
1970	36.34%	10.21%
1971	28.55%	19.23%
1972	10.78%	10.43%
1973	14.04%	4.20%
1974	17.07%	12.00%

Part 2
Table 65

Is there any change in the ratio of expenditures for Vocational Education from State and local funds to expenditures from Federal funds?

Very little. The ratio has been approximately five to one for several years -- the States and local school districts spending five times as much as the Federal Government for Vocational Education. There has been a slight lengthening of the difference each year since 1972, and in FY 1974 the ratio was approaching 5½ to 1.

	1972	1973	1974
State and Local Reported Expenditures	$2,192,214,457	$2,548,840,378	$2,996,446,575
Federal Expenditures	465,334,274	481,817,114	551,442,453
Ratio of State and local to Federal Expenditures	4.71:1	5.29:1	5.43:1

Federal expenditures increased in 42 States and declined in 10, while State and local expenditures increased in 48 States and decreased in only four. Federal expenditures in all States in FY 1974 increased by 14.45 percent, compared to a 17.56 percent increase in total State and local expenditures. Clearly, the States and local schools are performing better in supporting Vocational Education growth than is the Federal Government.

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[13] "Annual Rates of Increase", FY 1963-73, are available in Learning a Living Across the Nation, Vol. 3, Part 1.

What is happening to the cost per student in Vocational Education?

Part 2
Table 69

On the whole it still appears to be going up, although the rate of increase is dropping. This is based on total reported expenditures and the total reported number of students served. It is impossible to determine cost data for major subdivisions of Vocational Education with any degree of accuracy in FY 1974. The U. S. Office of Management and Budget (OMB) required the use of a new set of financial reporting forms that were extremely complex and failed to make adequate provision for reporting expenditures by program level and purpose. As a result, very few State expenditures in categories such as secondary, post-secondary, and adult -- or disadvantaged, handicapped, and regular -- equal the totals reported on the same forms. These forms will be redesigned, but their use even for one year leaves information gaps that cannot be filled. The total Vocational Education cost per secondary student and also per post-secondary student in 1973-74 both show declines. This is virtually impossible when the total cost for all students had increased.

Is anything happening to change the pattern of relatively low expenditures for the disadvantaged and handicapped in Vocational Education?

Part 2
Tables
28, 29,
70, 71

Apparently not, although there is no way of accurately measuring whatever change may have taken place, because of the problem with the FY 1974 data. The available data show a slight decrease in expenditures for both categories, but because they are underreported to some extent there may have been no decrease and even a modest increase. One thing is fairly certain: If there was an increase, the pattern over four years could not have changed significantly. Expenditures for the disadvantaged and handicapped in Vocational Education apparently remained at relatively low levels compared with expenditures for all students.

	1971-72	1972-73	1973-74[14]
Total Expenditures for Disadvantaged Vocational Education Students	$286,786,154	$318,694,933	$309,475,356
Percent of Total Vocational Education Expenditures	10.84	10.52	8.72
Total Expenditures for Handicapped Vocational Education Students	66,138,395	94,150,830	83,040,479
Percent of Total Vocational Education Expenditures	2.49	3.11	2.34

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[14] The drop in expenditures for disadvantaged and handicapped in 1973-74 is due in part to a problem in the USOE reporting system for that year, as noted in the preceding text.

Because Federal law requires minimum percentages of Federal allocations to be used for the disadvantaged and handicapped, 15 percent and 10 percent respectively, it should be pointed out that the figures here include State and local as well as Federal funds. The Federal reporting forms for FY 1974 make it a waste of time to separate such expenditures, so the Federal share is not broken out. However, if Congress expected total Federal, State, and local support for these two groups of Vocational Education students to be more than minimal, four years of data suggest the need for a different approach.

Part 2
Tables
66-68

What is happening to the relative emphasis on secondary, post-secondary, and adult Vocational Education as shown by expenditures at each level?

Apparently very little. The difficulty with FY 1974 financial reporting forms resulted in failure to account by level for nearly six percent of the funds spent that year. However, if the unreported expenditures were distributed in roughly the same proportions as the 94 percent, the figures would be only slightly higher than in the year before. On a State-by-State basis there were a number of significant variations, but these tend to be canceled out over a period of several years, so it can be assumed that they represent variations in annual cash flow rather than in program emphasis.

	1971-72	1972-73	1973-74[15]
Total Vocational Education Expenditures	$2,657,548,731	$3,030,657,492	$3,547,889,028
Total Vocational Education Expenditures at Secondary Level	1,746,312,000	1,988,544,000	2,131,134,871
Percent of Vocational Education Expenditures at Secondary Level	65.71	65.61	60.07
Total Vocational Education Expenditures at Post-secondary Level	701,836,000	842,039,000	962,216,866
Percent of Vocational Education Expenditures at Post-secondary Level	26.41	27.78	27.12
Total Vocational Education Expenditures at Adult Level	197,902,000	190,530,000	248,773,791

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[15] Unreported expenditures by level in FY 1974 were due to a problem in the Federal reporting system, as noted in the text.

	1971-72	1972-73	1973-74[16]
Percent of Vocational Education Expenditures at Adult Level	7.45	6.29	7.01
Expenditures Unreported by Level	11,498,731	9,544,492	205,763,500
Percent of Expenditures Unreported by Level	0.43	0.31	5.80

How much of the cost of Vocational Education is being used for instruction, and how much of that for instructional salaries?

Nationally, no one knows. Project Baseline reported in Volume 3 that for 1972-73, 80 percent of the total was used for instructional costs of one kind or another, and nearly 80 percent of this for teachers' salaries. Teachers' salaries accounted for only 61 percent of total Vocational Education expenditures.

For school year 1973-74 the new financial reporting form did not include instructional costs. The States maintained expenditure records that would have provided this information, but it was not asked for, so it was not reported.

How much of the cost of Vocational Education is used for ancillary services, and how much of this for administration and supervision?

Part 2
Table 31

For ancillary services altogether (administration and supervision, teacher education, research and demonstration, and curriculum development) less than 10 percent. Administration and supervision took just under 80 percent of this in 1973-74. Both percentages were down slightly from the year before. It should be noted that reporting of ancillary costs remained unchanged on the new forms, so these data are comparable from one year to the next.

	Total Ancillary Costs		Administration and Supervision		
	Cost	% of Total Voc.Ed. Cost	Cost	% of Ancillary Cost	% of Total Voc. Ed. Cost
1972-73	$280,499,032	9.26	$226,690,842	80.82	7.48
1973-74	$306,500,012	8.64	$244,299,038	79.71	6.89

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[16] Unreported expenditures by level in FY 1974 were due to a problem in the Federal reporting system, as noted in the text.

The Government Accounting Office, in its recent report on Vocational Education, was critical of the high cost of administration. This seems a strange position to take when the legislation of 1963 and 1968 called for sweeping changes, massive restructuring, and unprecedented expansion of Vocational Education. Less than 10 percent being spent for all of the means to carry out the mandates of the Federal Legislation except simple expansion is difficult to imagine. Even 80 percent of this, or seven percent of total Vocational Education expenditures, for administration and supervision would seem low rather than high considering the relatively small amount involved for initiating and carrying out the substantial changes called for in the Federal statutes. In 1973-74 the situation was getting worse, not better, in terms of funds used primarily to achieve the objectives of the Vocational Education Act rather than merely supporting the status quo.

Part 2
Tables
30,31,64

How much of the cost of Vocational Education is used for guidance and counseling, teacher education, and curriculum development?

Just over three percent is used for guidance and counseling, less than one percent for teacher education, and less than one-half percent for curriculum development. Except for teacher education this was a slight increase over the previous year, but appallingly low in view of the importance of each of these activities in providing "Vocational training or retraining which is of high quality,"[17] as called for in the legislation of 1963 and 1968. A national budget for vocational guidance and counseling of $112,559,705 comes to $6.61 per student enrolled in public secondary and two-year post-secondary schools[18]. Thirty-two million dollars for vocational teacher education is $2.38 per student enrolled in Vocational Education. Half that much for curriculum development is only a little more than $1 per student.

	1972-73	1973-74
Total Vocational Education Expenditures	$3,030,657,492	$3,547,889,028
Expenditure for Guidance and Counseling	87,964,400	112,559,705

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[17] The Vocational Education Amendments of 1968 are quoted here.

[18] The 1975 Readers Digest Almanac lists enrollments for 1973-74 as 14,100,000 in public secondary schools and 2,917,253 in two-year colleges, for a total of 17,017,253.

- continued -	1972-73	1973-74
Percent for Guidance and Counseling	2.90	3.17
Expenditures for Teacher Education	29,778,550	32,205,111
Percent for Teacher Education	0.98	0.91
Expenditures for Curriculum Development	9,449,085	16,630,878
Percent for Curriculum Development	0.31	0.47

How much does research and demonstration cost?

Part 2
Tables
31-35, 64

A little more than two percent of the total cost of Vocational Education. In view of the attention being given to Vocational Education research and demonstration this year by the National Science Foundation and National Research Council, the current Project Baseline national report, and Congress, it seems advisable to take a closer look at the financial support for those activities. Research expenditures as reported by the States to USOE are broken down into a number of categories. These include Part C carryover funds from the previous year spent in the year being reported, Part C carryover funds not actually spent but obligated, research coordinating unit (RCU) expenditures and grants made during the year from that year's allocation, research obligations from that year's allocation that will carry over until the next year, and a further breakdown of each of these categories into Federal funds and State and local funds. Approximately the same categories are provided for Part D funds.

In addition, there is a category under Vocational Education ancillary funds for research and demonstration that includes some but not all of the Parts C and D expenditures reported on the R and D forms, plus R and D ancillary expenditures under Parts A, B, F and G of the Vocational Education Act. Also, under ancillary services the States report fairly substantial expenditures for curriculum development, paralleling the Federal Government's expenditures for curriculum development under Part I of the Vocational Education Act.

The result is some confusion over how much money is actually being used for Vocational Education research and demonstration. The reporting forms include Parts C and D allocations as well as expenditures, and allocations are broken down into carryover, expenditures, and unpaid obligations.

For the purpose of comparing research expenditures in 1973-74 with previous years, the amount reported under ancillary funds for research and demonstration must be used. This is the figure most readily available and actually used by Project Baseline in previous years, although substantial amounts used for research and demonstration under Parts C and D are omitted, such as grants made by State research coordinating units. It also includes expenditures for research and demonstration from other parts of the Act, not just C and D.

On this basis, research and demonstration expenditures declined in 1973-74 from the year before. It may have been an actual decline of expenditures for the limited purposes defined as ancillary services, or it may have been the result of some States changing their reporting procedures in using the new forms. The comparison is therefore tenuous at best.

	1972-73	1973-74
Research and Demonstration Expenditures from Ancillary Funds	$14,580,555	$13,364,985
Percent of Total Ancillary Expenditures	5.20	4.36
Percent of Total Vocational Education Costs	0.48	0.38

A better figure for Vocational Education research and demonstration expenditures is the total of all Part C and Part D reported by the States, with the addition of research and demonstration expenditures from other parts of the Vocational Education Act under ancillary services and State and local curriculum development. In 1973-74 this came to less than one and one-half percent of the total cost of Vocational Education.

Total Part C Expenditures Reported by the States	$12,381,995
Percent of Total Vocational Education Expenditures	0.35
Total Part D Expenditures Reported by the States	$17,367,919
Percent of Total Vocational Education Expenditures	0.49

Total Parts C and D Research and Demonstration Reported by the States	$29,749,914
Ancillary Research and Demonstration Expenditures From Parts of the Act Other Than C and D	$ 6,111,280
Ancillary Curriculum Development Expenditures	$16,630,878
Total Vocational Education Research and Demonstration Expenditures Reported by the States	$52,492,072
Percent of Total Vocational Education Expenditures Represented by State-Reported Research and Demonstration	1.48

This still does not represent the entire national effort in supporting Vocational Education research and development under the 1963 and 1968 legislation. In the appropriation for Vocational Education for FY 1974, $18,000,000 was earmarked "for grants to States" (Part C), $16,000,000 "for innovative programs" (Part D), and $4,000,000 "to support curricula for new and changing occupations." In the case of Part C funds, even though the Appropriations Act may have intended all $18,000,000 to go to the States, the law itself provides that only half of the amount appropriated must go to the States. The other half is to be used at the discretion of the Commissioner. What actually happened was that the Commissioner used most of his discretionary funds for special research grants in the States on the basis of the same distribution formula by which the States' half of Part C funds are distributed. These are not included in the expenditures reported by the States. The same is true of half of the Part D expenditures for exemplary projects and all of the Part I expenditures for curriculum development.

The amount thus spent in Federal research and demonstration grants and for curriculum development should be added to the totals above for a complete figure showing Federal, State and local Vocational Education expenditures for research and demonstration. Even with this it was just slightly more than two percent of the 1973-74 total cost of Vocational Education in the United States.

Federal Part C Grants from Commissioner's Discretionary Funds	$9,000,000[19]
Federal Part D Expenditures	$8,000,000

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[19] Federal expenditures are approximations only, but may be considered reasonably close to actual amounts spent.

Federal Part I Expenditures	$6,000,000
Total Federal, State and Local Research and Demonstration Expenditures	$75,492,072
Percent of Total Federal, State, and Local Vocational Education Expenditures	2.13

Another useful set of research and demonstration figures reported by the States is Federal allocations. These show the Federal Government's effort in supporting research and demonstration activities at the State and local levels. In 1973-74 these were far below the amounts expected by Congress when the Vocational Education legislation was enacted.

1973-74 Part C Allocation	$ 8,991,967[20]
Total 1973-74 Allocation to the States for Vocational Education	$507,031,445
Part C as a Percent of Total Federal Allocation for Vocational Education	1.77
1973-74 Part D Allocation	$ 7,980,043
Part D as a Percent of Total Federal Allocation for Vocational Education	1.57

Congress not only expected but mandated in the legislation that 10 percent of the Federal allocations to the States under Parts B and C of the Act should be spent for research activities under Part C. Both the Administration in its annual budget requests and the Appropriations Committees have consistently violated this provision of the law for almost a decade.

Completions and Placements

Part 2
Table 59

What impact did Vocational Education have on the employment market in 1973-74?

Slightly less than the year before, but it was still a substantial impact. Over one million Vocational Education graduates and early leavers with skills were employed that year, an increase of 8.82 percent over the year before. Nearly 800,000 of these were employed in the fields for which they were trained or related fields.

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[20] It may be assumed that this figure was actually $9 million, because it included allocations to four U.S. territories from which Project Baseline has not collected data. The appropriation was for $18 million, half of which by law must go to the States and territories.

Altogether two and one-third million Vocational Education students completed their programs or left early with skills, but more than one-half million were known to be unavailable for employment because they were continuing in school or for personal reasons. Over one-third million were continuing their education at higher levels. Another one-third million could not be reached, and some of these may be assumed to have been employed. Only 120,746 were known to be unemployed, which was just over five percent -- slightly more than the year before.

	1971-72	1972-73	1973-74
Completions	1,588,603	1,938,379	2,111,032
Percent of Change	6.39	22.02	8.91
Left Before Completion With Skills	135,501	110,377	218,556
Percent of Change	10.34	-18.54	98.01
Total Prepared for Employment	1,724,104	2,048,7[illegible]	2,329,588
Percent of Change	6.69	18.83	13.71
Unknown	293,537	336,717	364,095
Percent of Change	-8.10	14.71	8.13
Employed Full-time in Field for Which Trained or Related Field	671,895	727,957	779,862
Percent of Change	19.02	8.34	7.13
Known to be Unemployed	89,901	99,119	120,746
Percent of Change	1.91	10.25	21.82
Employed Full-time in Other Fields	206,513	267,343	303,270
Percent of Change	26.25	29.46	13.44
Total Employed Full-time	878,408	995,300	1,083,132
Percent of Change	20.65	13.31	8.82
Known to be Not Available for Employment	457,161	457,891	519,149

	1971-72	1972-73	1973-74
Percent of Change	15.84	0.16	13.38
Continuing Education at Higher Level	325,478	314,314	352,197
Percent of Change	7.27	-3.43	12.05
Available for Placement	968,050	1,094,419	1,204,923
Percent of Change	18.18	13.05	10.10
Percent of Those Prepared for Employment Who Were Employed in Field for Which Trained or Related Field	38.97	35.53	33.48
Percent of Those Prepared for Employment Who Were Employed Full-time	50.95	48.58	46.49
Percent of Those Prepared for Employment and Available for Placement Who Were Employed Full-time	90.74	90.94	89.89

Part 2
Table 59

How did the economic recession affect Vocational Education graduates and other completers in 1974?

Job placement was higher than the year before, and although the percent of those available for work who were employed was less, the decrease was very slight. Assuming that these data are reasonably reliable -- and that is becoming increasingly evident through validation procedures in a number of States -- this indication of the results of Vocational Education may be significant. It is true that while the national unemployment rate had increased very little from the year before, this may have been due in part at least to Government emergency employment programs. In any case, at a time when the economy was at a relatively low point, and jobs were more difficult to find regardless of the number of unemployed, almost the same percent of former Vocational Education students found jobs as in the previous year.

Part 2
Tables
60-62

How did job placement of Vocational Education students compare at the secondary, post-secondary, and adult preparatory levels in 1974?

The employment rates were close. Ninety-two percent of those available for work at the post-secondary level were employed, 90.38 percent at the adult level, and 88.57 percent at the secondary level.

An assumption is sometimes made that placement of secondary Vocational Education students is much lower than at the post-secondary level, but that apparently is not supported by these data.

The percent of those available for employment in the field for which they were trained or a related field is considerably higher for post-secondary students than for secondary. This is not surprising. Adult placement in jobs for which trained -- 64.22 percent -- raises a question about the nature of adult Vocational Education, or at least about the definition of this level in many States.

	Secondary	Post-secondary	Adult
Completions	1,287,874	527,724	295,434
Left Before Completion with Skills		(Data not available)	
Total Prepared for Employment		(Data not available)	
Unknown	205,767	96,188	62,140
Employed Full-time in Field for which Trained or Related Field	404,931	270,238	104,693
Known to be Unemployed	76,939	28,169	15,638
Employed Full-time in Other Field	199,194	61,441	42,635
Total Employed Full-time	604,125	331,679	147,328
Known to be Not Available for Employment	409,182	71,841	38,126
Continuing Education at Higher Level	301,598	36,588	14,011
Available for Placement	682,064	359,848	163,011
Percent of Those Available for Placement Employed in Field for Which Trained or Related Field	59.37	75.10	64.22
Percent of Those Available for Placement Who Were Employed Full-time	88.57	92.17	90.38

Part 2
Tables
59-61

How does Vocational Education student employment compare with the rest of the population?

Quite favorably. For comparable age groups former Vocational Education students in the fall of 1974 had substantially higher rates of employment. That is, there was a substantially lower unemployment rate for former Vocational Education students at both the secondary and post-secondary levels than for comparable age groups in the total population. The differences were even greater in 1974 than they had been in 1973. All employment rates increased between 1973 and 1974, but the increases were less for Vocational Education than for the total population or for any age group.

The unemployment rate for Blacks and other ethnic minorities again, as in the previous year, was considerably higher than for either the population as a whole or Vocational Education graduates. Data are greatly needed that would show the employment and unemployment rates of Blacks and other ethnic minorities within Vocational Education, especially because these are the groups that ordinarily have difficulty in getting jobs.

	Oct. 1973	Oct. 1974
National Unemployment[21]	4.6%	6.0%
Blacks and Other Minorities Unemployment	8.4%	10.9%
National Vocational Education Unemployment	9.1%	10.1%
National 16-19 Unemployment	14.1%	17.1%
Blacks and Other Minorities 16-19 Unemployment	27.2%	34.5%
Secondary Vocational Education Unemployment	10.2%	11.4%
National 20-24 Unemployment	7.1%	9.4%
Blacks and Other Minorities 20-24 Unemployment	13.9%	16.8%
Post-secondary Vocational Education Unemployment	7.1%	7.8%

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[21] Employment and Earnings, February 1975, U. S. Department of Labor, Bureau of Labor Statistics. All non-Vocational Education unemployment data come from this source. All are updated as of February 1975, and all except Blacks and other minority data have been seasonally adjusted. The large discrepancies between these data for 1973 and those used in Baseline's Vol. 3 are due to updating, resulting in more accurate figures.

What is happening to the number of Vocational Education teachers in the United States?

Part 2
Tables
36,37,72

The number is increasing, but not enough to keep up with increasing enrollments. Over a three-year period, 1971-74, the number of teachers increased by a little more than 50,000, or 25.55 percent. The number of students increased by more than three million, or almost 29 percent.

More serious than this lag is the threat of a diminishing potential. Preservice Vocational Education students -- those preparing to become teachers -- increased by only 715 in 1973-74 over the previous year. This was slightly more than one percent. Inservice training was a little better, but not much. Roughly 5,000 more Vocational Education teachers received additional professional training in 1973-74 than in the previous year, an increase of 5.27 percent.

The total number of Vocational Education teachers increased only nine percent in 1973-74 over the previous year, compared with the 12 percent increase in enrollment. The total full-time equivalent of Vocational Education teachers at the secondary level, where enrollment increased 14 percent, was also only nine percent. It was higher at the post-secondary level, 14.65 percent, but here the enrollment increase was almost 18 percent.

Only at the adult level did the increase of teachers keep up with the increase of students. Enrollment increased almost five percent, and although part-time adult Vocational Education teachers went up only three percent, full-time teachers increased almost 11 percent.

	1971-72	1972-73	1973-74	Total Three-Year Increase[22]
Total Vocational Education Teachers (Full- and Part-time)	235,315	243,303	265,290	53,995
Percent of Increase	11.37	3.39	9.04	25.55
Total Vocational Education Enrollments	11,578,609	12,064,761	13,512,060	3,026,827
Percent of Increase	10.43	4.20	12.00	28.87

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[22] The 1971 totals from which three years are measured were 211,295 Vocational Education teachers, and 10,485,233 Vocational Education students.

	1972-73	1973-74	% of Increase
Secondary FTE	116,974	127,519	9.01
Post-secondary FTE	40,605	46,555	14.65
Adult Full-time	5,698	6,313	10.79
Adult Part-time	70,186	72,437	3.21
Inservice Training	91,992	96,844	5.27
Preservice Training	59,330	60,045	1.21

State directors of Vocational Education are referring to the situation in terms like "critical," "rampant," and "desperate." Among 49 States reporting, an overwhelming majority list some degree of shortages and several say the shortage is moderate or great. It is most serious at the secondary level, but is also found in over a fourth of the States at the post-secondary level and in a number at the adult level. Five States report shortages at every level, and 11 at two levels.

Two States reported shortages in all occupational areas, but the shortages are most widespread in two occupational areas, agriculture, and trade and industrial occupations. They are also reported in distributive education, health occupations, office education, industrial arts, and cooperative education. The shortage of vocational agriculture teachers, in the opinion of some State directors, is due to increasing enrollments and too many teachers leaving to go back to the farm. The same was true of trade and industrial teachers who were taking jobs in industry for higher pay.

Teacher Shortages	Number of States
None	6
Some	20
Moderate	14
Great	9
Secondary	35
Post-secondary	15
Adult	10
Agriculture	25
Distributive Education	17
Health Occupations	18
Home Economics	2
Office Occupations	7
Trade and Industrial	28
Industrial Arts	11
Cooperative Vocational Ed.	6

There may be a glimmer of hope in the fact that in over half of the States Vocational Education teachers have non-vocational or academic assignments as well as vocational. As the situation worsens they might be available for more vocational teaching, while academic teachers could take over their other classes. But even the possibility or wisdom of this may be doubtful. Many of those so-called non-vocational assignments are related to Vocational Education, such as personal typing courses, shop mathematics, and industrial arts. For these and similar skill-related courses to be taken away from vocational educators would require that they be replaced with similarly skilled teachers. Worse, the dichotomy between academic education and Vocational Education, which the entire thrust of the Vocational Education Act of 1963 was directed against, would be further encouraged.

What kind of counseling is available to Vocational Education students?

Part 1
Appendix B

In over half of the States teachers serve as counselors either officially or unofficially. In more than half of the States, not necessarily the same ones, Vocational Education counseling is also available. But in those States where professional vocational counselors are not available, vocational teachers and non-vocational counselors have to provide all of the information and advice about job opportunities and career choices that students receive in their schools.

This is not necessarily a severe limitation in the case of vocational students, although expecting any teacher to be familiar with the employment market beyond his or her own occupational field or outside the community and State is unrealistic. For the non-vocational students, vocational counseling in these States is haphazard at best and may be virtually non-existent in some schools. This is not to say that vocational counseling is not being provided by the schools' regular counseling personnel. Efforts have been under way for a number of years to strengthen this aspect of educational counseling, and they have probably made significant headway. Nevertheless, the knowledge required for vocational and career counseling is so extensive, so specialized, and so in need of constant updating that it would seem advisable to have counselors available for this purpose. In 18 States vocational counseling apparently is available only from vocational teachers or regular counselors.

It must be recognized that the data on which these observations are based may not be adequate. They come from State Departments of Vocational Education. Local schools in many cases may be strengthening their vocational and career counseling programs without the State agencies being aware of it. But the State vocational agencies are very much concerned about vocational guidance in the schools, and they are supporting this activity with Federal and in many cases State funds. It is not likely that very much vocational counseling is being developed without their knowledge.

Even recognizing that the data are not firm, that they are supported by little or no documentation, the reporting by State vocational agencies that these situations exist is enough to generate serious concern. The selection of Vocational Education programs by students, and the career-related choices they should be making seem too important to be left to teachers, counselors, students, and their friends and families, whose knowledge about these things is usually very limited.

Manpower

How much skill training for employment was provided by the manpower programs in 1974, and how much did it cost, compared with Vocational Education?

It is no longer possible to get this kind of information. Only limited data at the national level (none at the State level) on a few programs were available for part of Fiscal 1974. When the Comprehensive Employment and Training Act (CETA) went into effect in 1974, some existing programs were allowed to complete their contracts, other programs were discontinued or transferred to various CETA titles, and new CETA programs were initiated. In addition, the CETA law requires only "such reports to the Secretary [of Labor] or the Comptroller General of the United States as he requires."[23] The Secretary requires only summary reports from prime sponsors of persons actually receiving skill training. Many prime sponsors also provide public service employment, work experience, and other activities that they are not required to report. There were 403 prime sponsors approved in 1974, at an expenditure level of $1.33 billion.

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[23] Manpower Report of the President, U. S. Department of Labor, April 1974, p. 63.

CHAPTER III

Assessing the Impact of Vocational Education Research and Demonstration

Is vocational research and demonstration paying off?

Part 1
Appendix C

Evidently it is. Four major categories were considered: (1) Federally administered research (Part C); (2) State-administered research (Part C); (3) Federally administered exemplary programs (Part D); and (4) State-administered exemplary programs (Part D). In the first category data were not available for measurement of all projects or expenditures, but of those projects for which follow-up information is available, a substantial number show evidences of impact extending beyond what might be considered a reasonable return on the investment. In each of the other three categories more than 90 percent of the projects undertaken during FY 1970-71, and State-administered projects in 1972, show some impact and at least two-thirds show considerable impact.

Almost all research and demonstration projects emphasized immediate applicability to existing or proposed Vocational Education programs. Almost no emphasis was placed on basic research. Consequently, the impact of basic versus applied research could not be studied.

What has been the impact of federally administered research (Part C) on Vocational Education?

Baseline Supplemental Report: "The Impact of Vocational Education Research at the Federal and State Levels, 1974"

A number of research projects supported by the Commissioner's Part C discretionary funds have had wide impact throughout the United States and in a number of foreign countries. The total impact of all projects is not known, but a list of those that could be followed up is reported in a Project Baseline supplementary report. The nature of the impact differs from one project to another but there are several types of projects in which it has been most evident.

One of these is curriculum revision and the development of new curricula. A number of national research projects have made considerable progress in removing the guesswork about skills and knowledge required in a variety of skilled occupations. Another area is the development of management information systems, through which program planning and accountability in Vocational Education have been advanced far beyond the level achieved in any other segment of American education or manpower training. Another is career selection, especially in the use of computer technology to expand the information available at local schools and to relate to the particular interests and aptitudes of individual students. Another is research coordination and dissemination.

The research coordination unit in each State and two national centers were originally established under the Commissioner's Part C discretionary funds, and a considerable amount of the innovation, redirection and restructuring of Vocational Education since these agencies came into existence bears the imprint of their involvement.

Part 1
Appendix C

How much of an impact have State-administered research (Part C) projects had on Vocational Education?

Ninety-four percent of all State-administered projects were found to have had some impact, at least locally. Half had produced results that were being used in a number of schools and school districts, and 29 percent had resulted in widespread implementation.

	No. of Projects	Percent
Total National Sample	96	100%
Widely Implemented or Extensively Used	28	29%
Implemented in Original Site and in a Few Additional Sites	21	22%
Implemented Only in Original Site	11	11%
Results Used as a Basis for Additional Work	30	31%
Little or No Known Current Use	6	6%

A stratified random sample was used in following up State-administered projects. The total number of projects reported in USOE publications for 1971 and 1972 was 1,142. The reason for selecting this period was that all of these projects had been completed and sufficient time had elapsed since then to permit assessment of their impact. For the purpose of this study "impact" means the extent to which local school districts and State education agencies have chosen to maintain and extend the implementation of methods, results, and philosophy developed in the projects. It was felt that acceptance by school administrators, local taxpayers, and State officials constitutes a reasonable measure of the worth of project outcomes in the absence of in-depth assessments of student attainments of skills and abilities.

Stratification for determining the sample was based on a project classification scheme used in the Baseline supplementary report on the impact of Vocational Education research. This scheme divided the projects first into two groups, those with a focus that was primarily statewide, and those of a primarily local nature. Each group was then subdivided into projects concerned chiefly with policy, administration (including guidance), and instruction. Each of these subdivisions was further categorized into one of the research levels of identification, clarification, solution, implementation, and evaluation.

Three to five percent of the projects in comparatively large categories such as instructional solution and instructional implementation were used, and somewhat higher percentages in the others. At least one project from each category was included, and the selection resulted in a sample of 96, or 8.4 percent of the total. Two separate analyses were used to establish confidence levels for the sample.

What is the record of impact by federally administered exemplary projects?

Part 1
Appendix C

Among the 54 exemplary projects supported for the first three-year period[1], 40 have had at least some impact beyond their own districts, bringing about changes at least in a few additional school districts within their States. Twelve of these have had extensive impact in their own States. Extensive, in this context, means enough acceptance that the majority of the schools in a State are using some or all of the concepts, materials, and other products. Four of the 40 have also been adopted in whole or in part by schools in other States.

One of the measures of success for these projects is their continuation with State and local funds after three years of Federal funding. Thirty-six of the 54 were continued at a level equal to or higher than under Federal support, and 15 others were continued at a reduced level.

This does not mean, where support was continued, that the projects remained unchanged. Frequently some elements were expanded while others were dropped. These programs have represented particularly well the evolutionary quality of research. Each was required to incorporate the products of vocational research in its original design. Those research products were thus put to the test of on-site implementation. Some were found to work quite well, some not so well; and frequently they were modified in the process. The process itself goes on, so that the full impact of a given amount of money for this kind of research and development can never be finally measured.

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[1] The projects included in this study were those scheduled to terminate during FY 1974 or earlier within the 50 States and District of Columbia. This made a total of 54 projects, one in each of 47 States, two in each of three States, and one in D.C.

	No. of Projects	Percent
Total Sample of Projects Funded During First Three-Year Period	54	100%
Implemented in Many States in Addition to Own District	4	7%
Extensive Implementation Within State in Addition to Own District	12	22%
Some Implementation in Several Areas of State in Addition to Own District	24	44%
Implementation Within District	8	15%
Minimal or No Implementation	6	11%
Funding Level Continued or Increased Under State and Local Funds Following Federal Termination	36	67%
Funding Level Continued at Reduced Level Under State and Local Funds Following Federal Termination	15	28%

Part 1
Appendix C

To what extent have State-administered exemplary (Part D) projects had an impact on Vocational Education?

Ninety-seven percent of the State-administered projects in a national sample are having some impact. The results are being implemented at least in the original site in 91 percent of the sample, and in at least a few additional sites in 62 percent. Twenty percent of the projects have been widely adopted by other schools and school districts.

	No. of Projects	Percent
Total National Sample	59	100%
Widely Implemented or Used	12	20%
Implemented in Original Site and in a Few Additional Sites	25	42%
Implemented in Original Site Only	17	29%
Information From Projects Being Used	3	5%
Little or No Known Current Impact	2	3%

As with the State-administered Part C projects, a stratified random sample was used. The total number of Part D projects reported in USOE publications for FY 1970-72 was 725. The major subdivisions used for stratification were: cooperation between education and manpower, post-secondary education, programs directed toward out-of-school youth, and programs for young people in school (secondary or younger). Each of these subdivisions was further categorized into five areas: counseling and placement, career awareness and exploration (career development), work experience, cooperative education, and vocational instruction.

The sample thus developed contained 59 projects or 8.1 percent. The largest subcategory was career education for young people in school.

What kinds of research and demonstration have had the most impact on Vocational Education?

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There seem to be no patterns. Project Baseline's criteria of impact were based on the numbers of schools, school districts, and States known to have adopted the results, or on the extent to which the States used the information. On this basis, the following projects are those from the sample with the most impact.

Twenty-eight State-administered research (Part C) projects whose results were widely implemented or extensively used:

"Computerized Vocational Information System (CVIS)" ($192,991)

This project built on three years of research on the CVIS system. The current results include extensive use of this system throughout the original State, and a consortium of users in over 30 States. CVIS was one of the projects reported on in the 1974 impact report published by Project Baseline.

"Implementation of Statewide On-Site Evaluation System" ($ 23,398)

This project followed one in 1971 on development of three-phase on-site evaluation instruments for Vocational Education programs in conjunction with the State's program approval and evaluation unit. The research coordinating unit manages the statewide on-site evaluation system, which has now been involved in conducting evaluations in more than 300 districts. Several other States have adopted or adapted this system for their own use.

"The Development and Implementation of an Individually Scheduled Cluster Curriculum in Occupational Education" ($183,535)

A packaging system was developed that allowed each student to move from shop to lab to media center on an individual basis.

After the software and multi-media system had been tried, the project became the central focus of professional development in occupational education demonstration centers across the State. Sixteen centers were installed, and each center trained at least three teams from schools in its area. These teams then trained personnel from schools in their vicinity. Sixty-four centers are now operating, and each has influenced programs in neighboring schools as well.

"Establishment of Vocational Research Information Centers (Phase III)" ($ 2,768)

Centers were established in 66 places in the State. The information system included ERIC and all educational journals and was computerized with a one-day turnaround from request to printout. Educational consultants at the State level help teachers or other interested persons determine which projects would be most useful for their needs.

"Determination of Justification to Offer Preparatory Math for Trade and Industry Vocational Students" ($ 360)

The original study was done to determine the need for a remedial or prerequisite course to upgrade mathematical competencies prior to a regular program. It led to a summer dropout-prevention program including tutoring that later expanded into a locally funded first semester program with 140 students per year. Over half of the State's 16 post-secondary districts have now developed similar programs in mathematics, and similar programs for other areas are being developed.

"A System Approach to Managing Individualized Instructional Curriculums (Modular) Developed Through the Techniques of Occupational Task Analysis" ($180,000)

This management system was closely linked with a project to develop the modular programs. Performance objectives were developed for all occupational areas. The management system was highly rated by USOE, several regional organizations, and business and industry groups. It is being tried experimentally in dozens of schools throughout the State and has been adopted by the Hartford Insurance Company to train employees. Information and materials have been traded or shared with school systems in all 50 States. The Federal funds were used strictly for development; all implementation costs, as well as some of the development, were supported locally.

"Interstate Distributive Education Curriculum Consortium" ($15,000-$32,000 per State)

Completely individualized learning activity packages for each marketing area of distributive education (DE-LAPS) were developed and have been widely put to use in each of the participating States. For example, in one State during 1974, 25-30 programs were in operation and for 1975, 50-60 more are expected.

"Fusion of Applied and Intellectual Skills (Phase I)" ($ 66,659)

Materials, procedures, and processes for teachers of career education in grades K-8 were developed. The results were packages of educational materials and instructional media entitled "A Valuing Approach to Career Education," with sets for grades K-2, 3-5, and 6-8. The packages have been validated within the State, distributed throughout the Nation, and published commercially.

"Institute for Occupational Research and Development" ($150,000)

A research institute sponsored by a State university was set up to conduct studies and provide other services related to occupational education, primarily for urban and suburban needs. Studies were done in all major areas of the State. Several of the studies had a wide impact. Some of the topics under study related to articulation between secondary and post-secondary programs. Others were concerned with evaluation. After this year the institute will continue with university funds.

"Manpower Projection Model System: Phase II" ($ 19,975)

Three manpower projection models were set up in local school systems, and one was chosen as the basis for a statewide system. Phase III was used to refine the system for State use, and Phase IV will be State implementation.

"A Follow-up Study of Former Students of Occupational Programs" ($ 500)

This was a local study that enabled the college involved to be the only school able to present accurate follow-up data in support of program requests when working with the legislature. Legislative response was so favorable that this study is now serving as a pilot for a statewide follow-up system. State officials are hoping to achieve similar results for other community colleges throughout the State.

"The Mexican-American, a Study of His Occupational Education" ($ 67,640)

The project, an extensive one on which an additional $48,166 in research (Part C) funds was spent the following year, provided information gathered from Vocational Education students, non-Vocational Education students, and community and school leaders. Results included broad recommendations for policy throughout the State and 71 specific recommendations, many of which were directed toward improvement of the total program of public Vocational Education. Used by the legislature and educators throughout the State.

"Statewide Computerized Model for Determining Occupational Opportunities, 1973 Report" ($ 5,739)

This is a model developed with research funds previously and widely used in the State for reports, curriculum planning, and program emphasis. The 1973 revision contained statewide employment projections classified according to the Dictionary of Occupational Titles. The occupational titles were coordinated with training programs established by the U. S. Office of Education. High research priority has been assigned to continued annual development, publication, and distribution of the model.

"Career Education Needs Information System" ($ 70,000)

A system was developed for collecting comprehensive statewide and area labor demand information directly from employers for occupations requiring less than baccalaureate training. Also included in the system were data on occupations taught in secondary and post-secondary schools, and whether they were declining, emerging, or stable. Over the past three years, several components have become operational, and the information provided is used in the preparation of the State Plan for Vocational Education.

"Feasibility and Equability of the Foundation Support System" ($ 6,752)

This study established the State foundation support for all secondary Vocational Education programs. As a result, State support of Vocational Education was raised from $1.3 million to $5.5 million. The study has also had considerable impact on vocational program development in local schools.

"A Planning Grant to Develop an Exemplary Program Model" ($ 6,878)

The model program based on this Part C planning grant was developed, funded by Part D commissioner's exemplary funds, and run for three years. Then the State legislature appropriated over $10 million to implement the model throughout the State.

"Making Demonstrations More Effective" ($ 470)

The research grant was used to modify a course in agriculture teacher education. Those modifications are now used both for preservice and inservice, and have spread from agriculture to trade and industrial education and to business and office courses. Regional RCU offices in the State have helped to implement the results in other institutions.

"Analysis of the Funding Process in Vocational-Technical Education" ($ 27,460)

Based upon the results of this project, the State's funding policy was changed, and the policy now used to administer support funds was officially established.

"Identification of Competencies in Food Service" ($ 15,895)

The results of this project are being used by the Mid-America Curriculum Consortium, one of seven consortia in the National Network for Curriculum Coordination in Vocational-Technical Education, to develop curricula for courses in food service.

"A Research and Demonstration Program for the Preparation of Health Occupations Teachers for Secondary and Post-secondary Schools" ($ 20,206)

A baccalaureate program was planned, developed and placed in one college of one of the State universities, with the assistance also of some EPDA funds. It has become the main source of health occupations teachers for the entire State. It has been extended to include summer courses training 35 teachers each of the past three years, and a summer institute in 1974 with 127 participants. Extension centers have also been set up in other areas of the State.

"Pilot Study of Secondary Vocational Education Program Costs" ($ 5,384)

This project was the pilot for a statewide evaluation and cost benefit study that analyzes each district once every five years. The program has 107 districts reporting on costs each year.

"Project NITRO-New Information to Release Opportunities: A Plan for Disseminating Information Related to All Phases of a New Voc-Tech School" ($ 500)

Information from this research project resulted in the hiring of a special placement coordinator in the city school system where the vocational-technical school is located. Two other cities in the State are using a similar plan following dissemination of project results by the RCU, and several additional cities are developing their own plans based on project results.

"Increasing Student/Teacher Ratio in Core Health Occupational Curriculum" ($ 14,500)

A learning center was developed that made it possible to double the number of students in basic nursing orientation with only a slight increase in professional personnel. The learning center included some hardware and extensive software for an individual approach. The basic theory course now has a student/teacher ratio of 25:1, compared with 8 or 10:1 for more advanced and practical courses. Similar learning centers have since been installed in post-secondary schools throughout the State.

"The Revision and Updating of a Master Plan for the Development of Vocational-Technical Education" ($ 15,000)

Information from the project has been the basis of many State board decisions for the establishment of policies concerning location of the eight area vocational schools currently operating in the State. It also provided much of the information needed for the long-range projections in the State plan, including need for new programs, equipment, and personnel.

"Research Third-Party Evaluation Conducted by the Center for Research in Administration" ($ 10,200)

Through this project significant steps were made in designing an evaluation model to determine the accomplishments of the career education models being implemented around the State. The aim was to establish whether goals were being achieved "to improve, not to prove or disprove."

"Occupational Experiences of High School Graduates" ($ 44,859)

A survey of high school graduates over a 10-year period provided information on their employment status and level of success together with the kind of training they had received. Results were provided to State department personnel, guidance counselors, administrators and teachers. The results are being used in curriculum development, in an occupational course at a State university, in a vocational guidance course, and as background material to aid in determining what types of courses to offer and what content to include.

"The Development of a Vocational Curriculum Guide for Distributive Education, Based on the Concept of Behavioral Objectives" ($ 10,692)

The guide is being used throughout the State as a resource book for teacher education. It provided the first in-depth work in behavioral objectives for distributive education, with an emphasis on non-cooperative programs.

"Identify State Manpower Need Assessment" ($ 10,000)

The study was used to identify the impact on industry of major projected changes in the State economic situation as related to MDTA and subsequently to the State Manpower Service Council under CETA. Almost all manpower training and adult Vocational Education programs in the State are based on the results of this study.

Sixteen federally administered exemplary (Part D) projects that have had extended implementation:

Each of the federally administered Part D projects was required to have a third-party evaluation, and some of the information below has been taken from those evaluation reports. All 54 projects, however, were followed up through conferences with the project directors or other persons closely associated with their operations.

"Career Development - A Pre-School to Adult Model Program" ($397,159; 6/70-6/73)

The career development program was built on several years of prior development by the State of a program for students in grades K-6 called Technology for Children (T4C). Due to the Federal funding, the State's timetable for expansion of T4C to all schools in the State was considerably shortened. In addition the project developed an integrated sequence leading from the elementary emphasis on hands-on experiences with many areas of modern technological equipment through vocational and technical education courses for older students and adults. The clear, specific design and planning system was considered by USOE/BOAE to be a major development of the project. The State and local school systems have taken on the responsibility for funding of project components within the State. The program was chosen as one of the original school-based models of career education for national dissemination.

"A Developmental Program of Occupational Education" ($372,869; 6/70-6/73)

A sequential kindergarten through grade 12 career education model was developed. Once students had expanded their career awareness, additional vocational programs were needed. This project benefitted from extensive community support, major emphasis on staff development and training, a strong job placement component with a centralized placement office, and a design that placed its influence at the center of the educational process within the classroom rather than on the periphery. The third-party required by USOE worked with the project from its beginning to set up process and product goals, and several indicators show substantial impact on both the school system and students. The program is now being funded locally.

"Sequential Approach to Vocational Education - An Exemplary Program" ($305,783; 6/70-6/73)

The major emphasis of this project was on teacher development and training, particularly for elementary teachers. It is one of very few programs that resulted in preservice teacher education courses in addition to inservice training and workshops. One of the products of the project was a coordinated health occupations curriculum for high school students that was articulated with the postsecondary program. At the time it was written, no such program at the secondary level was available, and copies of the curriculum guide were requested by schools throughout the Nation. Another frequently requested product was a manual for administrators on how to implement career education in their own schools. The sequential career development program, leading from kindergarten through grade 14, began in seven classrooms and had increased to 183 by the end of the first year. It is now completely incorporated in all schools in the county, and has become a part of the State plan for all districts in the State. The project director has been part of a team that acted as third-party evaluator for projects in at least four other States and conducted training sessions for teachers and administrators in several other States on implementation of career education in the classroom.

"Project SPAN -- An Accelerated Project for a System Program Approaching Non-Unemployment of Vocational Students" ($391,353; 6/70-6/73)

This program, located in the most seriously disadvantaged poverty areas of the city, provided occupational orientation from kindergarten through grade 14. It included a series of career-related educational television programs to be broadcast for elementary students, a cooperative educational program designed for junior high students who had reached the age of 16, and concentrated job development and placement for senior high students. Some segments of the program were adopted by secondary schools throughout the State as well as by school systems in other States. Canada, India, and West Germany have shown strong interest in its operation. An extensive process product and teacher sensitivity evaluation design was used. The success of the project has been a factor in the decision of the legislature to provide that high schools must now offer Vocational Education opportunities for at least 50 percent of the students throughout the State.

"A Human Resources Career Development Model in Conjunction with a Model Cities Agency" ($312,705; 3/71-2/74)

In addition to a career development program for elementary and secondary students and a coordinated K-12 guidance program, this project provided intensive short-term skill training courses after school hours. Dropouts, college students, graduates, and regular students took part. This segment has experienced considerable growth. The project was difficult to assign to an impact category because its products are being used by service schools overseas, five to six editions of its curriculum materials have been distributed, and both teachers and administrators throughout the school system are committed to the career education concept. However, the State legislature has not yet decided to support adoption of the program for the State with State funds. Even so, the project has provided background materials, support and teacher training for other federally supported career education programs in the State. One of the basic objectives of the many workshops conducted for inservice teacher education was to help the teachers feel intellectually secure and comfortable with the new approach. The final report was carefully designed to aid in the implementation of like projects in other areas.

"A Project to Demonstrate Making Vocational Education More Accessible to Persons in Rural Areas Through Cooperative Vocational Centers" ($122,537; 10/70-9/71)

This program was designed to provide a wider range of Vocational Education opportunities in areas where no secondary school alone could afford a comprehensive offering. The State had planned to try it in two areas for three years before determining whether to expand it. However, the results were so popular that by the third year 14 centers had been built, and by 1975, there were 54 in operation throughout the State. With about seven districts pooling resources for each center, the centers have been relatively inexpensive to run.

"Project CAREER - Career Education Process for the Handicapped" ($421,408; 7/72-6/74)

In this case, State Part D funds were used in conjunction with the federally administered Part D project. It was one portion of a three-phase pilot curriculum development system for career development/career education using a base of approximately 50,000 behavorial objectives relating to 75 to 100 current, new, and emerging occupations. The federally administered exemplary funds were primarily directed toward the special needs population. Better utilization of project results was achieved in high schools than in regional vocational schools. All high schools in the State now have access to the computerized system. In 1974, 28 to 35 high schools were chosen for close examination of results.

"An Exemplary Model for a Total Ecological Approach to Non-Graded Vocational Programs in Separate Educational Centers" ($116,318; 6/70-6/71)

"A Comprehensive Vocational Education Program for Career Development in Grades K-12" ($544,433; 9/71-9/74)

These are sequential projects in the same State, the second based on the results of the first. The concept developed in the first project was tested and showed that students attained entry-level job skills (sometimes several) with no loss in academic performance. Community and business acceptance was high, leading to an expansion of the program into two additional counties under the second project grant. The first project took place in four urban ghetto secondary schools. The second was expanded to include a sequential development program beginning in elementary schools, then leading the students through career awareness and orientation into the skill development courses made available in the secondary portion. It has since spread to every county in the State, and the legislature has supported the concept with over $10 million in appropriations.

"Model Cities Exemplary Program" ($325,777; 6/71-6/74)

This program was directed primarily toward the students from low-income families. A major emphasis was on hands-on involvement of the students in kindergarten through grade eight leading into skill development courses in high school. Job placement and counseling were also emphasized. The original model was in seven elementary and three secondary schools. The program served as the basis for a statewide commitment to the career education concept. The State has since appropriated $5 million to spread career education throughout the State, and this exemplary project has been widely influential, according to the State Department of Education. Project personnel were so willing to share their materials and methods without expecting credit for them that the State department says few school districts using them are aware of their origin. In the project evaluation, employers rated students highly for on-the-job performance based on skills they had gained through the program.

"Career Development Project (K-Adult)" ($355,686; 7/70-6/73)

One product of this project was a television series on careers that was telecast for three years in a row, was disseminated by the Eastern Educational Network, and is now available to schools throughout the State. The project has had the most impact at the elementary level, where a systematic procedure has been developed to expose all students to the career information system. Joint use of State and federally administered Part D funds has been very effective in implementing career education in the State. Two-thirds of the school districts have developed career education program plans, and almost every district in the State has established career education as a priority. All but two districts have participated in leadership training, and the State legislature is providing categorical funds for career education.

"A Program in Developmental Vocational Guidance (K-12)
and Occupational Preparation for the Changing World
of Work" ($310,575; 6/70-6/73)

This sequential career development program for students from kindergarten through grade 12 emphasized teacher involvement from its inception. While school districts in various parts of the State were encouraged to become involved, the major emphasis for the first two years was on developing an operating system in a single setting with 11 elementary schools and four secondary schools. The State Department of Vocational Education sponsored this project and took on a major share of the responsibility for its dissemination. Local schools throughout the State implement career education with the help of mini-grants and copies of materials distributed by the State department. The State commitment to the career education concept places special emphasis on career choice and career preparation in the latter part of high school. New Vocational Education buildings constructed in conjunction with the junior colleges are an indication of the public support of this commitment.

"Community College Vocational Cooperative Education" ($575,944; 8/70-7/73)

This project was designed to evaluate the results of a cooperative education format in the community college setting. Employer evaluation forms based on performance objectives were developed. One segment of the evaluation found that community college cooperative education students had half the dropout rate of other community college students and maintained a higher than average academic standing. It also found that cooperative education provides more student financial assistance than any other resource. The final report indicated a clear, specific and easily understood planning and evaluation design. For the five community colleges involved, there were 5,000 cooperative students the third year rather than the expected 3,000, and for all of the State approximately 100,000 students are in cooperative programs at this time. While the project does not deserve all the credit, it did have a definite influence.

"Improving a Rural Area School Program with Expanded Vocational Education Services by Utilizing Comprehensive Career Orientation and Exemplary Activities" ($330,238; 1/71-12/73)

The original program provided career awareness and orientation designed to lead into an expanded program in Vocational Education being planned for the county area vocational school. Twenty-three schools in a rural county -- 18 elementary, four secondary, and one post-secondary -- were involved. The third-party evaluator noted a sharp drop in absenteeism, and the Annual Descriptive Report for Vocational Education reported a significant lowering of the dropout rate. Evaluation of this program also showed a 24.5 percent increase in mathematics achievement and an 11 percent increase in language achievement, as well as an 18 percent increase in occupational awareness. This program, together with a federally administered research (Part C) project in another county, served as the career education model for the State and has been implemented statewide. Programs have been set up for teachers at one university, and the project directors act as consultants to the school districts. School districts in two other States have also implemented portions of the project.

"Pilot Occupational Education Program for Small Rural and Suburban Schools in Grades Five through Twelve" ($387,503; 6/70-6/73)

This project was also designed to provide a career education program for small schools. The major problem area was to change the opinion of parents and students that the only road to success was college, a road not open to the marginal student. An emphasis on cooperative education and developing lines of communication between schools and the business community helped to cut absenteeism. Eight small schools encompassing grades five through 12 joined together to conduct this project. The program was extended to grades one through 12 after the first year. Many other schools throughout the State are implementing the program, and the products and methods that were developed now serve as a basis for a statewide effort to implement career development activities.

"Area-Wide Project for Occupational Orientation, Exploration, Counseling, Job Training, and Job Placement for Elementary and Secondary Students" ($343,292; 10/70-9/73)

This program included a pyramid system of implementation from elementary career awareness and exploration to part-day training of senior high students at a nearby community college. The project directors and evaluators expressed the opinion that for a temporary project funds should not be used for actual job placement. Instead they chose to train students to work with public and private job placement agencies. One of the most highly rated segments of this project was a summer program of hands-on vocational exploration with on-the-job training for dropouts at a career education center. After the project began, the State's total school system was reorganized from one based on counties to an area concept. The summer program was not continued, but every area has set up career education centers where students from small schools are based for part-day vocational and career education programs. Many centers carry on the same types of activities as the summer program did.

Twelve State-administered exemplary (Part D) projects that have been widely implemented:

"Career Development - a Pre-school Through Adult Model Program" ($ 50,797)

This project consists of a coordinated curriculum leading from an elementary program emphasizing a familiarity with modern technology through a hands-on approach through the career education continuum to adult vocational and technical education. It provides an example of a State using part of its share of the Part D funds to combine with a federally administered exemplary program. The State department commitment has led to implementation in schools throughout the State, and this project was also chosen as a model for national dissemination by USOE.

"Project CAREER (Computer Assisted REsearch for Educational Relevance)" ($137,506)

This project also was combined with a federally administered exemplary program. Articulation between secondary and post-secondary schools was stressed, with reliance placed on the use of behavioral objectives relating to more then 75 occupations with long-range employment opportunities. The pilot environments consisted of an urban school, a regional vocational school, and a comprehensive high school. High schools throughout the State are now using the results.

"Air Force Materials Project" ($ 10,000)

Materials from U. S. Air Force instructional courses were adapted for public school use. Some of the materials included lists of supplies, curricula, behavioral objectives, and criterion-referenced measures of student achievement. It was in a follow-up assessment that students trained by the U. S. Air Force method could work competently immediately upon employment, while students receiving the same information in regular public school programs required several weeks of on-the-job training to develop equivalent competency levels. Forty-five States currently run programs using the U. S. Air Force materials. They are published by the Aerospace Education Foundation for 82 courses in 26 major career areas.

"156 Mini Grants at $300 - $500 Apiece" ($ 62,862)

The main thrust of these mini-grants was innovation in the classroom. The range covered both secondary and post-secondary students, from attitude development to individual instruction packets in consumer and homemaking education and various occupational fields. Some of the programs began in one school, then spread to all schools in the district. Some included learning activity packets that were reproduced and distributed statewide by the State Department of Vocational Education. One project resulted in a set of color slides, with sound, for recruitment of students to an area vocational school. The enrollment has since quadrupled.

"Project Opportunity"	($ 25,000)

In this project the curriculum for a LPN-health program in a post-secondary area vocational school was individualized, and the process and product were developed in transportable form. These were provided to other area schools throughout the State, and have also branched down into many secondary schools.

"Pilot Program for Health Occupations in a Secondary School"	($ 67,100)

A new secondary health occupations project designed to lead from the secondary schools to the current health occupation curriculum at the post-secondary level. Seventy-five programs in the State are now using the program outline developed by this project.

"Integrated Shop Project"	($ 1,800)

Curriculum and student units were developed for a course including agricultural mechanics, trade and industrial education, and industrial arts. The units were designed for small high schools with limited funds for shop facilities. The program is run in two phases -- exploration starting in ninth grade (possibly 7-8-9) with a more concentrated skill development phase in grades 11 and 12. Once it proved successful in the original district, another Part D project was funded for $56,500 to implement it in a total of 14 districts.

"Environmental Technology Instructional Training Program"	($ 9,328)

Several additional exemplary projects were connected with this one, all directed toward the development of a program leading from ninth grade orientation through 11th and 12th grade specialized training in core areas relating to air conditioning and heating, plumbing, waste water, and related trades and industries. About a dozen school districts are now operating these programs under regular Vocational Education funding.

"Planning Grant - Development of an Educational Continuum for Health Occupations"	($ 9,369)

The planning grant served to define a problem relating to the ability of people to move from one occupational level to another. Results included a career mobility program funded under MDTA for about $118,000. The major goal was to develop a complete career ladder in at least one area, then to use this as a guide for other areas. The progress level and outlook for significant statewide impact at this time appear to be encouraging.

"Career Development Activities" ($ 63,300)

This project was connected with a federally administered exemplary project consisting of a wide-spectrum career education program in K-14. New technical programs have since been added to all of the State's area vocational-technical schools, partly as a result of increased student awareness of occupational fields growing out of the career education project. There are now 10 operating career education programs that have grown out of this one.

"Summer Survey of Dropouts" ($ 59,000)

This survey, combined with a Part C research grant, was influential in the development of a series of programs to aid current dropouts and dropout-prone students. It also was a contributing factor in the development of a coordinated job placement program that is being used throughout the county where the project was located.

"Guidance and Insight" ($ 17,145)

The major objectives for this project were to aid students in self-evaluation and in determining career objectives, partly to help prevent dropouts. The format used was an exemplary take-off of the "World of Business", a combination of "World of Construction" and "World of Manufacturing" (KACP). The program was originally in one junior high, and now is used in all junior high schools in the original city and in a neighboring major city.

Part 1
Appendix C

Why are some State-administered research and demonstration projects more successful than others?

Enthusiasm and commitment of project directors, local school commitment, sponsoring agencies and the nature of the project seem to be factors of varying importance. The most noticeable characteristic of the more successful projects has been the enthusiasm and commitment of the project directors. It is an intangible element, to be sure, but it seems to have been a common element in projects that have had extensive impact, and much less evident in the others. Support from school administrators for project goals was found to be another important element common to successful projects. This was particularly evident in projects designed to solve problems of concern to school administrators and in projects establishing programs desired by local school districts.

The only category in the sample that yielded a significantly higher than average number of widely accepted projects was research directed toward establishment of State policy. In contrast, the only category containing more than one project at the bottom of the impact scale was evaluation of instructional programs on a local level.

Of the sponsoring agencies, the State Departments of Vocational Education appear most frequently to have produced projects with extensive impact in both research and demonstration. Secondary schools and post-secondary area vocational schools seem to have sponsored a preponderance of exemplary projects that were implemented in several additional schools. Successful research projects seem to have been distributed fairly evenly among independent agencies.

The level of funding does not seem to have had much effect on impact, except in the over-$60,000 range. Of the 19 projects funded for $60,000 or more, 12 have been implemented widely in their States and only two were at the opposite end of the impact scale. Projects funded for less than $60,000 seem to have had about equal chances of widespread or very limited impact, and that held true even for those under $3,000.

Number of years of funding does not seem to have had much connection with impact. Among the demonstration projects where the time was set beforehand, more one-year projects had significant impact than two- or three-year projects. For the research projects, the second year of funding depended partly on the first-year results, so two years of funding may have resulted from project impact rather than caused it.

Are there any common elements in the more successful federally administered demonstration projects?

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Two are clearly evident: project and third-party evaluation design; and an emphasis on teacher training through workshops and inservice sessions. Half of the widely implemented projects gave evidence of a well-designed, well-accepted and well-organized evaluation program that provided useful feedback to teachers and administrators during the course of the project. None of those at the bottom of the implementation scale had impressive third-party evaluation programs. The final reports of nearly all projects with some impact contain indications of the usefulness of their evaluation programs.

All of the directors of those projects with extensive implementation emphasize the importance of teacher orientation and training. In the great majority of projects with no impact beyond the original school district, no such emphasis was evident.

What do researchers and demonstration project directors say should be done to get the most mileage out of Vocational Education research and demonstration?

The most frequent suggestions are for thorough planning, more lead time, an emphasis on professional personnel orientation and training, cooperation and support of the local school districts, and continuing or extended evaluation built into the project design. Some of the exemplary projects had been planning for the kinds of changes incorporated in the design for as long as two years prior to the availability of Federal funding, and the project directors attributed much of their success to that planning. State-administered research and exemplary project directors usually had smaller operations to plan for, but one of the explanations of success was the kind of initial planning performed. Small planning grants were recommended as a practice by several research coordinating unit directors. Federally sponsored exemplary project directors repeatedly listed good planning as a major factor in the success of their efforts.

Directors of large projects, especially suggested that start-up should be extended without necessarily increasing the dollar amounts. A project scheduled to begin in late summer or early fall should have some of the funds by late spring or early summer in order to prepare adequately for full-scale operations when the school year begins. An alternative when early funding is not possible would be to start up on a more deliberate basis, postponing full-scale operations until the next school year to allow for adequate preparations -- administrator and teacher orientation and training, organization of advisory councils, development of evaluation procedures, purchase of equipment and supplies, public relations activities, guidance and counseling activities, etc.

It was widely agreed that administrative and teacher orientation and training should receive stronger emphasis. Involving local school personnel is critical, and the involvement should be more than token contacts. Orientation and training should be fully supported by project funds, so that professional personnel from the local school district will be brought into the effort on a basis of full commitment. Business, labor, and community leaders should also be involved, and given adequate preparation for that involvement. The director of one of the most widely implemented projects said, "Attitudinal change is the name of the game," and that is especially true of those administrators and civic leaders responsible for deciding where local funds will be used.

Project directors say acceptance of local responsibility might improve also if the final year of Federal funding could be spread over a period of two to three years. In the case of large exemplary projects this would allow for a more gradual changeover from Federal to local funding, and it would also provide more time for gaining the commitment of local personnel to project concepts before Federal support and assistance are withdrawn. State-administered Part C research and Part D exemplary projects would also benefit from implementation, and this is often done by State agencies. Project directors tend to feel that the highest risk of failure comes when the Federal support ends, and implementation of the project too often is left to chance.

A stronger emphasis on a continuing or extended evaluation period should also be built into projects, according to the directors, so results and changes can be determined for several years following the end of grant support. This would necessarily tie in with prior planning and would include collection of Baseline data against which to compare project results. It is the opinion of many directors that an assessment of alterations in student and teacher attitudes, choices, and abilities two or three years later would provide a more reliable index of project impact than any assessment done shortly after or immediately prior to completion.

It is recognized that certain difficulties are inherent in such a delayed assessment, such as separating the influence of a particular project from other developments within the schools during the intervening time. It was pointed out in several of the exemplary evaluation reports that assessments of student awareness of benefits from career education in their schools may be misleading if teachers have skillfully integrated career concepts into their normal classroom procedures. In many of the most successful programs, students have no idea that career education has been a focus of their curriculum, even when measurable changes in their attitude and skill levels have occurred.

What difficulties were most often encountered by federally administered Part D exemplary project directors?

There were several. Heading the list was the widespread problem of late funding. It began the first year when the grants were approved and projects organized in the expectation of funds being available by early fall of 1969. The Appropriations Act containing those funds was not signed into law, however, until April 1970. Second- and third-year continuation grants were also dependent on annual appropriations and, while these were not as late as in FY 1970, they were never completed in time for the funds to arrive at the project locations until after the school year was well under way. Staff positions, teacher training workshops, administrative approval, and a host of other details were left uncertain for several months at a time. And during these periods when continuity, local support and confidence were essential, they were being eroded away.

For the Federal Government to have set up a fairly expensive program involving substantial staff, curriculum, and administrative restructuring in a local school district, then appear to have abandoned it for prolonged periods, did not contribute significantly to a favorable climate in the local school or district. It says something for the value of the federally administered Part D exemplary projects, and the competence and commitment of those who were involved in their operation at every level, that such an impressive impact has been realized in spite of the handicap of uncertain funding.

Another problem experienced by some project directors was the difficulty of enlisting wholehearted support of local administrators and teachers. In one case the secondary level counselors would not agree to administer the General Aptitude Test Battery (GATB) to any student who had not indicated an intention to go to college. While that problem was later resolved, it does point up the efforts required to enlist the support of non-project personnel and gain their commitment to the goals, desired outcomes, and expected benefits of the project.

This leads, however, to another difficulty experienced in many projects: lack of clearly defined goals and objectives. The inexperience of many school districts in setting up and managing projects as large as these, coupled with the deliberately vague explanations by USOE of what career education was intended to mean, combined to weaken some of the original project designs. Some of them were rescued by the close cooperation and assistance of third-party evaluators who insisted on tightening up the goals and objectives into operational terms that the teachers could use. At the same time, some project directors indicated that even nationally recognized evaluation experts did not at that time have methods for defining and assessing the kinds of attitudinal changes desired by USOE as outcomes of the exemplary projects.

Time constraints were also a problem for project directors. The changes to be brought about were often quite extensive, and local school districts that had not been trying to plan and assess the need for those changes for a considerable time prior to funding had some difficulty convincing enough people in responsible positions that the project methods were worthwhile. Project directors were usually convinced that career orientation and awareness at the elementary level, coupled with more varied opportunities to participate in occupational training courses in grades 10-14, were important additions to the structure of the educational system. However, evidence to that effect had to be assembled, and three years was a relatively short time in which to do so.

Some projects were, predictably, hampered by their physical situations, which in itself made apparent the necessity of some kind of change. Urban areas with a high level of inter-group tensions required delicate handling on the part of both project directors and school administrators. When such a situation was compounded by the problems just described and heightened by time constraints, the results could have looked very discouraging. Again, however, the fact that a considerable measure of success was realized speaks well for the professional personnel who had the responsibility for federally administered Part D exemplary projects.

CHAPTER IV

Toward Better Information in the States

Each year since this study began the quality of information supplied by the States has improved. It has been due almost entirely to a conscious effort on the part of State agencies to gather and process their statistical data more efficiently and with more accuracy. For the most part, it has been accomplished through the use of automation, and each year an increasing number of States have either changed from manual reporting systems to computers or made additional improvements in their use of automated management information systems (MIS).

In spite of the improvement, however, Vocational Education data coming from the States still have numerous problems. No nationally standardized set of definitions has yet been developed, although this may be close to reality. Careless handling of data and indifference to accuracy are still problems, especially in manual systems. The use of computers itself in no way assures better data. The red flag of data processing is GIGO -- Garbage In, Garbage Out. Most States experience problems the first year or two under a new automation system, some of them extremely aggravating, and these show up as errors in statistical reports.

On the whole, however, improvements in Vocational Education data over the past four years considerably outweigh the remaining problems. This chapter in the Baseline report is intended to describe the present state-of-the-art on a national and State-by-State basis.

What does a good Vocational Education information system look like?

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It contains primary source data in a totally integrated system making up a data base adequate for a wide variety of information needs, and is designed to feed back into program operations. Taking these features one at a time, primary source data have the obvious advantage of accuracy over data copied from other documents.

It was never possible to collect and store source data in an information system until modern technology produced copying machines and computers. Now it simply involves keypunching from original documents (or photographic copies of original documents), or using optical scanning forms to be read onto magnetic tape automatically. The original documents used by most States in Vocational Education systems are forms sent to the schools and filled out by students or teachers.

Some States are beginning to use magnetic tapes on which the data are copied by machine from local school district files where the record systems are already automated.

Student enrollment totals at the school district, local school, or classroom level are not primary source data, because they have been copied from other records. When this is done, as it is in a few States, they suffer from two possible limitations: human errors may occur, and the relationships that may need to be examined later are strictly limited to the number of data items totaled. If it becomes important, for example, to know the number of Black female students in distributive education who complete the program compared to Black males or non-Black students, there is no way of getting this information out of the sustem unless these particular totals were included in the first place. On the other hand, if individual student enrollment data are collected, either on forms supplied by the State agency or from the school enrollment forms, this kind of specific information can be pulled out of the computer at any time.

A totally integrated system is one in which any data elements can be related to any others, including student enrollment, professional personnel, programs, and expenditures. Follow-up data may or may not be completely integrated, depending on State preference. Integration of data is just another name for linking different kinds of data together, i.e. enrollment by course with expenditures by course, or numbers of completions with the qualifications of professional personnel. It is done with the use of code numbers. Course codes are already well established in Vocational Education through the use of a standardized U. S. Office of Education course code list. In a totally integrated system, every file contains some combination of several code numbers, i.e. student, teacher, course, school, school district, county, and Congressional District.

A data base adequate for a wide variety of information needs is able to supply both what can be anticipated and what will inevitably be called for later when new needs arise. There is a risk in overburdening the system with such quantities of unused data that its operation becomes cumbersome and unnecessarily expensive. Experience among the States with good information systems suggests that a desirable balance can be achieved by emphasizing output rather than input in the systems' design. There is always a temptation to collect data simply because they are nice to have, whether or not they have any real value to program administrators or decision makers. The test should be, what can the data be used for?

Aside from the risk of collecting too much data, the data base should not be limited to just what is needed for a single purpose. This is the mistake made too often by States that develop their systems simply to fill out Federal reports. The data base can, and in many States does, supply to administrators and decision-makers much more, valuable information needed for program operations, planning, expansion and support.

This leads to the need for feedback. A good system does not simply supply information. It supplies information leading to program changes, modification, and updating. The kinds of data coming out of the system, always limited of course by the nature of the data going in, have a direct bearing on numbers, kinds, locations, and costs of programs offered and students served. One State, for example, has a simple printout each year listing courses with fewer than 10 students enrolled by occupational area, school district, and school. Each State's various needs for information will be somewhat different, but all of those needs are considered in the design and the updating of a good information system.

How many States are using automated systems, and how many of these have been established or improved in the past two years?

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Forty-one States are processing at least part of their Vocational Education data by computer, and 15 of these have begun doing so since 1972. Two other States have used automation at one time and abandoned it to return to manual systems. Two States that use automation for financial records only have had individual student enrollment data in computers but have returned to collecting and compiling those data manually. Almost every State with some kind of automated system in operation more than a year or two has made improvements or enlarged its scope since the system was established.

The extent of automation is by no means uniform. Only 16 of the 41 States with some kind of automation include individual enrollment data at all three levels, and eight others at one or two levels. Fifteen States do not collect individual student enrollment data but use district, school, or classroom totals. In many cases the data collected are limited almost entirely to what is needed for Federal reporting. No State has yet developed a system with all of the features and capabilities described earlier in this chapter.

A number of States, however, do have systems that are quite sophisticated and highly satisfactory. This is particularly true of those that have used automation more than two years. Earlier systems tend to be more complete than those since 1972 because the additional time has allowed more improvements and expansion. Another reason, however, has been a tendency in the past two or three years to go into automation on a less ambitious scale than was often the case earlier. Fewer new systems, for example, contain individual student enrollment data. Probably the principal reason is the added cost at a time when budgets are tight.

States With Some Automation Before 1972	Levels Automated Now			Student Enrollment Data Automated
	Sec.	Post-sec.	Adult	
Arizona	X	X	X	All levels by individual
Arkansas	X	X	X	All levels by individual

States With Some Automation Before 1972	Levels Automated Now			Student Enrollment Data Automated
	Sec.	Post-sec.	Adult	
- continued -				
California	X	X	X	Totaled by school at all levels
Colorado	X	X		Secondary and post-sec. by indiv.
Connecticut	X	X	X	Totaled by school at all levels
Georgia		X		Post-sec. totaled by district
Hawaii	X	X	X	All levels by individual
Illinois	X	X	X	Totaled by school at all levels
Indiana	X	X		Totaled by school at all levels
Iowa	X	X		Totaled by class at secondary and post-secondary levels
Kentucky	X	X	X	All levels by individual
Maryland	X	X	X	All levels by individual
Massachusetts	X	X	X	Totaled by school at all levels
Mississippi	X	X	X	Totaled by school at all levels
Missouri	X	X	X	All levels by individual
Nevada[1]	X	X	X	All levels by individual
New Mexico	X	X	X	All levels by individual
Ohio	X	X	X	Totaled by class at all levels
Oklahoma	X	X	X	All levels by individual
Oregon	X			Secondary by individual
Pennsylvania	X	X	X	All levels by individual
Tennessee	X	X	X	All levels by individual
Washington	X	X	X	Totaled by school at all levels
West Virginia	X	X		Secondary and post-secondary by individual
Wisconsin		X	X	Post-secondary and adult by individual

States Automated Since 1972	Levels Automated Now			Student Enrollment Data Automated
	Sec.	Post-sec.	Adult	
Alabama	X	X	X	All levels by individual
Alaska	X			Secondary by individual
Florida	X	X	X	Secondary and adult by individual
Kansas	X	X	X	All levels by individual
Michigan	X	X	X	Totaled by school at all levels
Minnesota	X	X	X	Totaled by school at all levels
Montana	X			Totaled by school at sec. level
New Jersey	X			Totaled by school at sec. level
New York	X	X	X	All levels by individual

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[1] Nevada was one of the first States to develop an automated system, but dropped it in 1971-72.

States Automated Since 1972	Levels Automated Now			Student Enrollment Data Automated
	Sec.	Post-sec.	Adult	
- continued -				
North Carolina	X	X	X	Post-secondary by individual; totaled by school at secondary and adult levels
Rhode Island	X	X	X	All levels by individual
South Carolina	X	X	X	Totaled by course at all levels
Texas	X	X	X	Secondary by individual
Utah	X	X	X	All levels by individual in 27 of 40 counties
Virginia[2]	X		X	Totaled by class at secondary and adult levels

How many States plan to automate or further develop automated systems in the next two years?

Fourteen altogether, and eight of these are automating for the first time. That will mean a total of 49 States with some kind of automated Vocational Education system. It is significant that six States already using automation are improving or expanding their system, moving the state-of-the-art ahead on a fairly broad scale. The initiative for all 14 has come from the U. S. Office of Education, which used national research funds for State grants.

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Another significant result of current expansion is the increased use of individual student data. Five States are developing systems with this capability at all levels, and two others at one level. Individual follow-up data are being added in eight States, one of these using a statistical sample, and individual professional personnel data in four. Individual financial data, which means expenditures by course or program in each school and is now collected fully or partially in only five State systems, is being added in three more.

States Planning New or Expanded Automated System Within Next Two Years	New System	Expanded System	Levels to be Automated or Expanded			Nature of Expansion	Individual Student Data to be Added
			Sec.	Post-Sec.	Adult		
California		X	X			Individual follow-up by statistical sample	

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[2] Virginia collected individual enrollment data in 1973-74, but changed to class totals in 1974-75.

States Planning New or Expanded Automated System Within Next Two Years	New System	Expanded System	Levels to be Automated or Expanded			Nature of Expansion	Individual Student Data to be Added
			Sec.	Post-sec.	Adult		
- continued -							
D. C.	X		X	X	X	Individual follow-up	
Idaho	X		X	X	X	Individual student enrollment and follow-up	All levels
Illinois		X	X	X	X	Individual student enrollment, follow-up, personnel and finance	All levels (partial in 1976)
Maine	X			X		Individual student enrollment	Post-secondary
Massachusetts		X	X	X	X	Individual personnel	
Michigan		X	X			Individual student enrollment	Secondary
Nebraska	X		X	X	X	Individual student enrollment, follow-up, personnel and financial data	All levels
New Hampshire	X		X	X	X	Individual student enrollment, follow-up and personnel totalled at local levels	All levels at LEA only
New Jersey	X		X	X	X	Student enrollment, follow-up and personnel	
New Mexico	X		X	X	X	Student enrollment and follow-up	
Utah		X	X	X	X	Individual student enrollment, and follow-up	All levels
Wisconsin		X		X	X	Financial data	
Wyoming	X		X	X	X	Individual follow-up data	

There is little question that the availability of Federal funds has had a predominant influence on the development of more sophisticated information systems containing individual data items. Federal funds were responsible also for the earlier systems, which were largely developed by State research coordinating units using Part C research money at a time when the Part C appropriation was larger than it had been for the past three years.

The trends toward this kind of system have not been dictated entirely by the availability of funds, however. In every State since the Vocational Education Act of 1963 went into effect, and especially with the Amendments of 1968, there have been increasing demands for information that the traditional tabulations and summaries could not supply. Program Planning and Budgeting Systems (PPBS) have required all kinds of new data, as have the growing concerns for accountability, assessment, and evaluation.

Members of Congress and congressional staff personnel have made it clear on a number of occasions that they do not want to supply the State with lists of data to collect or questions they will expect to ask. They want the States to have enough information about their programs so they can come up with anything Congress needs to know when they are asked. State legislatures seem to be increasingly interested in detailed information also, as is evidenced by the demand each year for Project Baseline's individual State profiles and annual summaries. It may be that Congress, State legislatures, and administrators at every level are becoming accustomed to the use of computer technology to obtain greater and more detailed knowledge than previously possible. Consequently, they want the same advantages in making decisions about Vocational Education.

How many States at this time have the capability in their information systems of reporting the numbers of males, females, and persons in each minority group enrolled in each occupational program or cluster?

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Twenty at one or more levels - secondary, post-secondary, adult. They can print out the information by computer because they have individual student data that include sex, minority group, and occupational program in which enrolled. There has been a great deal of concern for a number of years about the extent to which Blacks and other minority groups are being served by Vocational Education, and more recently a similar concern about the status of women. Total numbers served were known until two years ago, but today, except in twenty States, no one knows even what occupational programs they are taking.

It is not enough to know that of all Black or Hispanic Americans enrolled in Vocational Education, a given number and percent are in agriculture, or auto mechanics, or office occupations, or health occupations. Nor is it enough to know how many males and how many females are being prepared in each skill program. It is necessary to know the male and female percentages of each group in each skill training program. Only then will educators, and the State and Federal agencies supporting Vocational Education, know if their programs are indeed opening up vocational careers to all students on a basis of increasing equality.

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How many States can supply the same information about disadvantaged and handicapped students?

Sixteen at one or more levels. It simply requires one additional code in the computer for each student's data file: disadvantaged, handicapped, both, or regular. The added information throws a lot of new light on the way these two groups are being served by Vocational Education, and on the extent to which students in either group are also concentrated -- if they are -- in the minority groups or as males or females. The most obvious use of the data is in feeding back to local schools such statewide information as topheavy enrollments of disadvantaged in low-paying occupations, and equally unrealistic concentrations of either disadvantaged or handicapped in occupations demanding performance levels ordinarily beyond their expectations.

These data, moreover, reveal if one or another of the several groups -- males and females, minorities, disadvantaged, and handicapped -- are nearly identical with any other group. This may be true of one kind of school or institution and not of another, which the data would show. Vocational Education, as noted earlier in this and previous Baseline reports, does not have an impressive record in serving disadvantaged and handicapped students. It may be that to some extent there is simply too little knowledge available about what is being done. In any case, the best way to go about improving the performance is to know more about the students who are being served, what is being done for them, and what happens to them afterwards.

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How many States can supply the information about sex, ethnic group, disadvantaged, and handicapped students in each occupational program or cluster who live in an inner city, urban, suburban, or rural neighborhood?

Twelve at one or more levels. This requires one more code in each individual student file, the ZIP code of his or her home address. With or without the other data available, a whole new area of knowledge is opened up by this one item alone. The U. S. Bureau of the Census has developed socioeconomic profiles of each ZIP code area in the Nation, containing such information as the median family income, average school year completed by the population in each age group, major industrial and economic activities, and occupations in which most persons are employed.

Next to the family, neighborhood influences are probably the most important environmental factors helping to shape and determine each student's interest, life style, aspirations, and to some extent capabilities and limitations. Vocational education planning cannot be properly carried on without this kind of information about students being served and groups of students being provided particular selections of training programs. The Federal Amendments of 1968, in fact, contain planning requirements that could not have been met without such information, but very few States collect it even now.

How many States can report the number of students in each of the preceding categories who were employed in the field for which they were trained after completing their program?

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Eleven. This requires a follow-up information system containing individual data collected either by teachers, local schools, or the State agency. If it is a statewide follow-up, it can be either of the total number or of a statistical sample. The advantages for program management and planning are obvious when employment is used as almost the only measure of Vocational Education success. It becomes possible with these data to measure success or failure, progress or decline, in terms of occupational programs and kinds of students in any geographic or combination of geographic locations. The product of Vocational Education and its impact on the employment market are no longer merely bodies, but people with particular combinations of identifying characteristics. Then, and then only, it becomes possible to serve Vocational Education students with their own combinations of characteristics in ways that substantial numbers of others with the same characteristics have found most beneficial.

Even if Vocational Education success is measured in ways other than simply placement, the value of individual follow-up data will remain critical in program assessment and evaluation. For example, former students' opinions of the value of their training might be used as one measurement, or future career objectives of those continuing their education at a higher level, or future plans of those not available for work. But such measurements would be of dubious value without knowing who these students are in terms of their sex, ethnic group, disadvantaged or handicapped status, kind of neighborhood, and occupational program.

How many States can report the actual cost, direct and indirect, of each clock hour of Vocational Education instruction for each course and program in Vocational Education?

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One State, Iowa, can do this for all courses at all levels in the State, and Florida can do it for all but a few of its post-secondary institutions. Ohio can do it each year for 20 percent of its schools, which rotate so that all schools are included every five years. Illinois, can do it in 15 counties and expects to have the entire State included by 1978-79. Tennessee, has efforts under way to adopt at some time in the future a financial reporting system that will contain this information.

The fact that only these five States have this kind of cost data available or planned for seems inconsistent with efforts during the past decade to develop accountability in Vocational Education. On the other hand, it is a beginning. No segment of the American education system has moved very far in this direction. Higher education has probably taken more initiative to do so than elementary and secondary, particularly through a project known as the National Center for Higher Education Management Systems (NCHEMS) sponsored by the Western Interstate Commission on Higher Education (WICHE) in Denver. The NCHEMS project has developed a completely automated MIS for colleges, universities and community colleges that contains total institutional cost data broken down by course, class, and hours of instruction. The system has been widely field-tested and is being adopted in a growing number of institutions throughout the United States. It could be adapted to secondary institutions without great difficulty, and this may already have been done on an experimental basis.

What features characterize Vocational Education information systems?

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Individual State systems range from completely manual with some data merely estimated to highly sophisticated fully automated data bases. Each State's system is described briefly below. Individual student enrollment data usually includes age, sex, grade level, ethnic group, disadvantaged, and handicapped. Other data may be included, such as cooperative program, ZIP code, social security number, length of course, occupational objective.

Individual student follow-up data usually include work status, occupation for which trained, age, sex, minority group, disadvantaged, and handicapped. Other data frequently included are salary, job title, student evaluation of training program, and future career expectations, especially if continuing in school at a higher level. Individual professional personnel data usually include social security number, age, race, salary, certification, teaching experience, and sometimes non-teaching experience in the teaching field.

In each automated MIS with individual data, any items can be related to any of the others. In partially automated systems with data compiled by course or class within each local school, considerable detailed information is usually available, and the kinds are listed in each instance below. These data, however, cannot be related to other data items. For example, the number of males and females in each course will be known, and the number of persons in each ethnic group in each course will be known; but the number of males and females of each ethnic group in each course cannot be determined unless this set of compilations has also been required in advance.

In States where financial data are compiled from expenditure reports, it may be assumed that they are more complete and perhaps more accurate than where such data are compiled from grant applications and reimbursement forms. Very few States, it will be ntoed, collect total direct and indirect expenditure data. Usually the indirect expenditures are missing or incomplete. In some cases, perhaps in most, direct expenditure data are also incomplete.

State information systems.

Alabama

Adopted an automated MIS as pilot operation in 1975 while continuing to use previous manual system as back-up the first year. New MIS contains individual student enrollment and follow-up data at all levels. Individual student enrollment data invariably include age, sex, grade level, course, program, and usually ethnic group, disadvantaged, handicapped, and code for geographical characteristics. Individual follow-up data include occupational program and the standard data items required by Federal reporting as a minimum, with sex, age, school, ethnic group, disadvantaged and handicapped usually available through internal linkage with enrollment files or collected separately. Additional follow-up data are also collected by many States including earnings, job title, employment satisfaction, and vocational program evaluation. Follow-up data collected from both students and employers. Financial data compiled from school grant applications or reimbursement records contain State and Federal expenditures with local matching by school and occupational area, but not total direct and indirect expenditures.

Alaska

Has had an automated MIS with individual student data at the secondary level since 1972. By 1976 the system will be expanded to include individual school program and professional personnel records at secondary level. Follow-up data are supplied manually by teachers, and due to high mobility of the population this is felt to be the only feasible way to collect follow-up data in the State. Financial data compiled from school grant applications as reimbursement records include Federal, State, and local matching by school and occupational area, but not total direct and indirect expenditures.

Arizona

Automated MIS with individual student enrollment and follow-up data at all levels since 1966-67. Enrollment data omit name and identifying information to protect privacy, but include code for geographic analysis. Post-secondary enrollment data supplied by community colleges on punch cards or tape for direct machine processing. Mail follow-up produces annual response of 60 percent or more. Expenditure data compiled from local school records include Federal, State, and local matching by school and occupational area, but not total direct and indirect expenditures.

Arkansas

Automated MIS in operation since 1970-71 at secondary and post-secondary levels; includes individual student enrollment and follow-up data. Follow-up data supplied by teachers, validated by survey of random sample of students who completed programs. Expenditure data compiled from school records include Federal, State, and local matching by school and occupational area, but not total direct and indirect expenditures. In 1976 the system will be expanded to include individual adult enrollment data.

California

Partially automated reporting system contains student enrollment and follow-up totals at local school level and professional personnel and finance totals at school district level, by categories required for Federal reporting. Includes secondary, post-secondary, and adult programs. Compilations forwarded to State regional agencies on punch cards, magnetic tape, optical scanning forms, and manual forms to be keypunched for regional use and forwarding to State agency. New follow-up system being developed for 1975-76 operation to contain individual student data from stratified random sample of all secondary school students, both vocational and non-vocational. Financial data compiled at district level from expenditure records, containing Federal, State, and fixed percentage representing local funds, but not total direct and indirect expenditures.

Colorado

Automated MIS since 1970-71 containing individual student enrollment, follow-up, and professional personnel data at secondary and post-secondary levels. Adult data totaled by program at local schools, planned for individual data by 1975-76. State will serve as field test for Ohio State University Center MIS model. Financial data compiled at district level from cost estimates and final expenditure records containing Federal, State, and local matching for direct costs only.

Connecticut

Partially automated reporting system adopted in 1967-68 with student enrollment and follow-up data totaled at local schools by categories required for Federal reporting, sent to State agency for keypunching. State makes feasibility studies as well as compilations for reports. Follow-up data validated by survey of 10 percent student sample. Financial data compiled from school grant applications include Federal, State, and local matching by schools and occupational area and represent total advance cost data, direct and indirect.

Delaware

Data for administration and Federal reporting collected manually in categories required for Federal reporting only. Automated individual student enrollment data at secondary level by private contractor in 1972-73, dropped after one year because of cost.

District of Columbia

Data for administration and Federal reporting collected manually in categories required for Federal reporting only. Automated follow-up system with individual student data to begin in 1975-76.

Florida

Automated MIS since 1970-71 containing individual student enrollment, follow-up, and professional personnel data at secondary and adult levels. All graduating secondary students followed up, both vocational and non-vocational. Local schools supplement student follow-up with employer information. All vocational post-secondary enrollment, follow-up, and professional personnel data in individual files; the rest totaled at local school level. Developing all expenditure data, including both direct and indirect, totaled at school district level by course and program.

Georgia

Partially automated information system at post-secondary level since 1969-70 containing student enrollment, follow-up and professional personnel totals by school district required for Federal reporting. Secondary and adult data collected manually by categories required for Federal reporting only. Financial data compiled from school district reimbursement forms include Federal, State, and local matching but not total direct and indirect expenditures. State plans to adopt new automated system at post-secondary level, but data and characteristics not decided.

Hawaii

Separate automated systems at secondary and post-secondary levels in operation since 1970-71 containing individual student enrollment and follow-up data. System in secondary schools changed to different contractor in 1972-73. Currently, at the post-secondary level, information manually extracted and compiled from computer reports produced by University of Hawaii Student Information System. This system provides information on almost all public vocational and non-vocational post-secondary students. Secondary financial expenditure data, total direct and indirect, by school and department. Post-secondary financial data compiled by school and occupational area in categories required for Federal reporting include Federal and State matching, but not total direct and indirect expenditures.

Idaho

Currently manual reporting system compiling State totals by categories required for Federal reporting. Statewide automated MIS proposal under legislative consideration to begin operation if approved late 1976. Vocational system will be one component, including individual student enrollment, follow-up, and direct cost data by course. Current financial data, compiled from school district reimbursement forms, include Federal, State, and local matching, primarily direct costs only.

Illinois

Transitional period under way from semi-manual system for Federal reporting to fully automated MIS. Four counties automated in 1974-75, 11 more in 1975-76. Entire State system to be in operation by 1978-79. System includes individual student enrollment, follow-up, professional personnel and actual program cost data at all levels. Student accounting, follow-up, manpower supply/demand, teacher supply/demand, program evaluation, and placement information subsystems linked through internal coding. Financial data include total direct and indirect expenditures by course and school, clock hour and enrollment. State education agency considering adoption of system for all secondary schools.

Indiana

Partially automated system in operation since 1973 at secondary and post-secondary levels containing student enrollment, follow-up, and professional personnel data totaled at local schools by male, female, handicapped, ethnic group, course, and end-of-class status. Enrollment and personnel data compiled by school administrators, follow-up data by teachers at secondary level and department heads at post-secondary. Financial information compiled from school district reimbursement forms include Federal, State, and local matching but not total direct and indirect expenditures.

Iowa

Partially automated reporting system in operation since 1970-71, includes student enrollment totals at the local school level by course, sex, grade level, disadvantaged and handicapped (and types of each), ethnic group, and contact hours for both secondary and post-secondary students. Some adult student data are similarly compiled, while others are reported manually. System contains individual professional personnel and financial data at secondary and post-secondary levels. Financial data include complete breakdown of both direct and indirect expenditures by class, enrollment, and clock hours.

Kansas

Automated MIS since 1973-74 at all levels containing individual student enrollment and follow-up data. Follow-up includes employer name and address when employed, and results are audited by State audit agency. Personnel data totaled by school districts. Expenditure data compiled by occupational area from monthly or quarterly school district expenditure reports. Total direct and indirect expenditures included, with Federal, State, and local funds identified at State level only.

Kentucky

Automated MIS at all levels since 1970-71 containing individual student enrollment data. System being completely overhauled, with manual operations in 1975-76 and new automated operation in 1976-77. Currently individual enrollment data entered manually on State form, sent to regional offices for checking and forwarded to State agency for manual compilation. Individual student follow-up data, supplied by students through forms mailed out by regional offices, include student evaluation of program and employer satisfaction. Completed forms sent by regional offices to State agency for compilation. Under new system in 1976-77 all data compiled by computer in regional offices, totals only supplied to State agency to protect privacy of students. System relating enrollment and follow-up data to employment demand by region under development. Expenditure data from schools directly controlled by the State (area and post-secondary) include all direct and indirect costs, Federal, State, and local, by course. Data from local school districts are totaled by occupational area only, include primarily direct expenditures of Federal, State, and local funds based on reimbursement forms, do not include total indirect costs.

Louisiana

All data compiled manually. Enrollment totals from schools by class in categories required for Federal reporting. Follow-up data supplied by teachers. Financial data compiled from school reimbursement forms by occupational area, include Federal, State and local matching, mostly direct costs, some indirect costs from area vocational schools.

Maine

Manual information system with data compiled by categories required for Federal reporting. Financial data from reimbursement forms at secondary level, budget requests at post-secondary level, include Federal and State direct only plus administration costs at post-secondary level; Federal, State and local direct costs only at secondary level. Currently developing new automated system with individual student enrollment data at post-secondary level to begin operation 1976-77.

Maryland

Automated MIS at all levels since 1969-70 containing individual student enrollment, follow-up, and professional data. Enrollment and personnel data supplied by school administrators, follow-up data by students. Plans for modifying follow-up procedures to collect data from statistical sample instead of all completers. Financial information currently manual reporting, planned to be automated by 1976-77, compiled from quarterly and end-of-year school district financial reports, includes Federal, State, and local expenditures for total direct and indirect costs.

Massachusetts

Partially automated information system with school district totals by categories required for Federal reporting. Follow-up systems used by school districts being explored for possible statewide adoption. Financial information collected from each school district on Federal reporting forms, keypunched for State tabulations, spot-checked with State disbursement records. Data include Federal, State and local matching, primarily direct expenditures.

Michigan

Partially automated MIS with aggregate school records used at all levels. Will expand automation with individual data in two or three years at the secondary level if funds become available. Local schools mail out follow-up forms to students, who return forms completed to schools, from where they are forwarded to State agency. Schools are asked to voluntarily validate student data from a sample of all students. Follow-up information includes occupational program, sex, age, ethnic group, disadvantaged, handicapped, job satisfaction, source of placement information and other detail. Expenditure data, compiled from secondary school district expenditure/revenue reports, post-secondary and adult reimbursement reports by course, include Federal, State and local funds, total direct and indirect costs for secondary, primarily direct costs for post-secondary and adult.

Minnesota

Partially automated information system, with special emphasis on follow-up. Enrollment and professional data collected at all levels in local school totals by categories required for Federal reporting. Individual follow-up data include student characteristics, evaluation of training program, and employer evaluation of students. Results used by schools for program planning and updating. Expenditure data compiled by course and level by school districts, represent total direct and indirect costs at post-secondary level and direct plus partial indirect costs at secondary level.

Mississippi

Partially automated information system with student enrollment data for all levels totaled at local schools by course, sex, ethnic group, disadvantaged, and handicapped. Follow-up data compiled by teachers. Professional personnel data compiled as school totals. Financial information compiled from school application and reimbursement forms, includes Federal, State and local matching but not total direct and indirect expenditures.

Missouri

Automated MIS since 1970-71 at all levels containing individual student, follow-up, and professional personnel records. Students supply enrollment data, teachers follow-up data, and district administrators professional personnel data. Financial information includes only salary, travel, and equipment compiled from school district reimbursement forms by occupational area and teacher name, Federal and State funds only; total direct and indirect expenditures not included.

Montana

Partially automated information system at secondary level since 1972-73 using local school enrollment data totaled by categories required for Federal reporting. Post-secondary and adult enrollment data compiled manually by required categories. Follow-up data at all levels originate as State agency estimates. Individual professional personnel data collected from teachers. Financial data compiled by school district from information supplied by local school administrators, include Federal, State, and local matching but not total direct and indirect expenditures. Completely automated MIS using individual data files in all subsystems planned for implementation by 1977-78.

Nebraska

Manual information system at all levels with data compiled from local schools by categories required for Federal reporting. Financial data include Federal, State, and local costs, but not total direct and indirect expenditures. Automated MIS currently being field-tested to include individual student enrollment, follow-up, and professional data held at local school level, State compilations by class, course, school, sex, age, grade level, ethnic group, type of disadvantage and type of handicap. Statewide implementation expected within two years. New statewide financial record system being gradually developed and implemented for all education, based on USOE Handbook IV.

Nevada

Individual student enrollment and follow-up data are collected in Clark County, class totals by categories required for Federal reporting in all other counties. Clark County (50 percent of the Vocational Education students in the State) follow-up data are used as sample of entire State in computing totals for Federal reports. Financial data from school district expenditure reports include Federal, State and local direct costs only, not indirect.

New Hampshire

Manual information system at all levels with data compiled from local schools by categories required for Federal reporting. Financial data compiled from application forms and reimbursement records include Federal, State and local direct costs only, no indirect costs. Plans to adopt automated MIS with individual student data failed this year to get legislative support; requested for next year.

New Jersey

State educational MIS with Vocational Education compilations beginning 1974-75 by program, grade level, minutes per week, hours per year, sex, race, and completion data for secondary students and post-secondary and adult in secondary institutions. Student enrollment in community colleges, all professional and all follow-up compiled manually by local schools. Complete automation hoped for by 1976-77, possibly with individual student data. Financial information contained in State educational MIS, but vocational expenditures for Federal reporting compiled manually from local expenditure reports by service area. Federal, State and local direct costs included, but not total indirect, most of which cannot be identified.

New Mexico

Individual student enrollment and follow-up data collected through 1970 Ohio State University Center system, estimated 80 percent effective. New system to be developed may include class totals only with student names and addresses compiled from individual school records for direct follow-up. Financial data compiled from school district reimbursement forms include Federal, State and local funds for direct costs. Financial data for indirect costs are compiled from original Notification of Grant Award to local education agencies.

New York

Automated MIS with individual student enrollment and follow-up data at all levels. Professional personnel data compiled from local school records by course, course section, school, school district, and sex. Financial data compiled from local school records by categories required for Federal reporting include Federal, State, and local costs, but not total direct and indirect expenditures.

North Carolina

Secondary student enrollment and follow-up data compiled by teachers from class records only in categories required for Federal reporting. Post-secondary student enrollment and follow-up data collected by individual records in each institution, but compiled for Federal reporting in categories required. Individual post-secondary personnel data. Financial information compiled from reimbursement forms in categories required for Federal reporting include Federal, State and local, but not total direct and indirect costs.

North Dakota

Partially automated information system with selected follow-up data, financial data and professional personnel records on computer. Student enrollment data compiled manually from class totals, which include class, course, race, sex, disadvantaged, and handicapped. Unduplicated count from local schools is uncertain. Enrollment and all follow-up data are scheduled for automation in 1976. Follow-up data compiled by teachers include number continuing in Vocational Education and number pursuing baccalaureate. Financial information compiled from annual program plans and reimbursement forms by service, purpose, level, and target population including Federal and State direct costs only.

Ohio

Has an automated MIS with class enrollment totals by sex, grade level, disadvantaged, handicapped, ethnic group, and clock hours. Follow-up data compiled from student sample stratified by class include earnings, occupational program, and categories required for Federal reporting. No recent validation of follow-up data; validation in 1967-68 showed high degree of correlation. Financial data collected from 20 percent of local schools (local board ledgers), rotated each year, include total direct and indirect cost per student per course and hours of instruction. Remaining 80 percent of schools report expenditures on reimbursement forms including Federal, State and local direct costs only.

Oklahoma

Automated MIS at all levels since 1969-70 includes individual student, follow-up and personnel data. Adult follow-up from statistical sample, secondary and post-secondary follow-up data supplied by teachers, validated by survey of 10 percent sample. Private school and manpower data combined with Vocational Education for annual supply/demand analysis using State Employment Commission demand data. Data from this system (OTIS) used for feedback to local schools, local and State planning. Financial data, Federal, State and local, compiled from local school reimbursement forms and area school expenditure reports by class. Expenditure reports include total direct and indirect costs, reimbursement forms direct costs only.

Oregon

Partially automated MIS with individual secondary student enrollment, follow-up, and professional personnel records. First-year follow-up includes all secondary Vocational Education students in some districts, 25 percent sample in others. Post-secondary and adult data compiled manually by categories required for Federal and State reporting. Expenditure data at secondary level automated, data available on a weighted student basis by occupational career cluster. Post-secondary and adult financial data compiled from local school expenditure reports by categories required for Federal reporting only, include Federal, State and local costs but not total direct and indirect expenditures.

Pennsylvania

Automated MIS at all levels with individual student enrollment, follow-up and professional personnel data in greater detail than perhaps any other State. System expanded annually to incorporate additional subsystems. Follow-up data collected from students on preprinted optical scan forms with basic data integrated with total system, annual response 48-54 percent for secondary, somewhat higher for post-secondary, sample of non-respondents followed up one year by outside contractor, results validated follow-up data received in two-wave mail-out. System designed and operated by private contractor six years, taken over by State agency with only minor changes 1975-76. Financial data compiled from local school grant applications, automated reimbursement forms, and expenditure reports include Federal, State and local direct and indirect costs. Considering development of expenditure data by course, by student hour, no immediate plans.

Rhode Island

Automated MIS begun in 1973-74 expanded each year, now operational in all but a few districts. Individual student enrollment and follow-up data, no validation of mail-out questionnaire follow-up response. Financial data compiled from application forms and quarterly reports by parts of the Federal legislation include total Federal, State and local direct and indirect costs.

South Carolina

Partially automated information system piloted 1973-74, full operation 1975-76. Class totals only by course and sex, ethnic group identity estimated at district level. Complete individual professional personnel data. Follow-up data supplied by teachers in categories required for Federal reporting plus OE Code, validation check made 1974-75. Financial data compiled by course and parts of the Federal legislation from local school plans and reimbursement forms, include Federal, State and local but not total direct and indirect costs.

South Dakota

Student enrollment, follow-up, and professional personnel data compiled manually at local school level by categories required for Federal reporting. Unduplicated count of enrollment arrived at through use of student roster. Follow-up data supplied by teachers. Financial data compiled from school reimbursement request forms include Federal, State and local funds, mostly direct costs only, efforts under way to gather more indirect expenditure data.

Tennessee

Automated MIS with individual student enrollment, follow-up and personnel data except in post-secondary community colleges where data for reporting are compiled by computer from student registration records. Post-secondary area schools supply individual student enrollment data from registration records, secondary schools from forms filled in by students. Follow-up data supplied by students in mail-out survey, results validated by teachers. Financial data currently collected and tabulated much as in other States, but efforts under way to adopt system with total direct and indirect expenditures and student contact hour costs.

Texas

Automated MIS in its first year of operation 1975-76 containing individual student enrollment, follow-up, and personnel data at secondary level, totals from post-secondary and adult classes by age, sex, grade level, ethnic group, disadvantaged, handicapped, and other categories required by State for program planning. Follow-up data supplied by teachers, no validation but research under way to improve follow-up data collection and processing. Financial information compiled from school district annual application forms include Federal, State and local, but not total direct and indirect expenditures.

Utah

Partially automated information system with individual student enrollment data processed by computer in 27 school districts and manually in 13, same data in both cases. Follow-up in transition to automation using optical scan mail-out to former students. Total system expected to be automated by 1976-77. Financial data compiled from grant application forms, currently being automated, include Federal, State and local, direct and indirect costs.

Vermont

Manual system, student enrollment and follow-up data compiled by local schools by categories required for Federal reporting. Unduplicated count determined by local schools. Follow-up data compiled by schools from mail-out forms sent to former students in most cases, smaller schools use telephone to collect data. No plans for automation, but discussion has taken place. Financial data compiled by occupational program from local school budget estimates checked against expenditure records, include Federal, State and local costs, but not total direct and indirect expenditures.

Virginia

Partially automated information system with class totals by length of course, sex, age, grade level, ethnic group, individual follow-up data for secondary and adult, compilation of post-secondary follow-up for Federal reporting supplied by Community College Board. Enrollment system with individual data 1973-74, changed to class totals 1974-75 to reduce work load. Financial data compiled from reimbursement forms include Federal, State and local matching, but not total direct and indirect expenditures.

Washington

Information system automated at local school level with compilations by categories required for Federal reporting and certain other categories at secondary level. Unduplicated count provided by local schools. Community college system automated with individual student enrollment, program, personnel, and facility utilization. Cost analysis to the course cluster level is possible. Follow-up data supplied by local school administrators from optional sources. Financial data compiled from reimbursement forms and expenditure reports include Federal, State, and local funds -- mostly direct costs, some indirect costs.

West Virginia

Automated MIS with individual enrollment, follow-up, and professional personnel data at secondary and post-secondary levels. Enrollment data supplied by teachers and follow-up and professional data supplied by school administrators. Adult enrollment, follow-up, and professional personnel data compiled by totals by school administrators. Financial data compiled by school totals by service areas include Federal, State, and local matching, but not total direct and indirect expenditures.

Wisconsin

Partially automated information system with individual student enrollment, follow-up, and professional personnel data at post-secondary level since 1966-67, adult since 1969-70. Cost data by individual course at post-secondary and adult levels currently being developed, fully operational by 1977-78. Secondary data compiled manually in local schools by categories required for Federal reporting only. Follow-up data supplied by schools from mail-out forms or telephone calls, total or sample optional. Individual professional personnel data collected by State. Financial data compiled from local school reimbursement forms include Federal, State and local matching, but not total direct and indirect expenditures.

Wyoming

Manual information system with student enrollment data totaled at local school by class, sex, and categories required for Federal reporting. Unduplicated enrollment cannot be determined. Fully automated enrollment and follow-up system under contract one year, discontinued because of cost State-operated system possible in future. Follow-up data supplied by teachers. Pilot follow-up system in one county 1974-75 in joint Vocational Education/University of Wyoming project contacted 80 percent of former students, data extremely accurate, processed by university computer. Pilot currently expanded to eight counties. Financial data compiled from school expenditure reports include Federal, State and local matching, mostly direct costs only.

Is Anything Being Done About Uniform Definitions?

Part 1
Appendix E

A national effort led by the State Directors of Vocational Education has come up with a new set of definitions. The National Association of State Directors in 1975 established a task force that did the job. On the task force were representatives of the U. S. Office of Education, the National Advisory Council on Vocational Education, the American Association of Community and Junior Colleges, the American Vocational Association, and Project Baseline. The list of terms to be defined was selected from current Federal statutes and legislation introduced to extend the Vocational Education Act. The full list with definitions is included in Appendix F.

Heading the list in importance is Vocational Education itself, together with several of its components, which have created most of the problems in compiling nationally uniform information. Vocational Education is defined as "organized educational programs, services, and activities which are directly related to the preparation of individuals for paid or unpaid employment, or for additional preparation for a career requiring other than a baccalaureate or advanced degree." This definition includes consumer and homemaking education and training for volunteer services, but it does not include the orientation and exploratory programs usually offered in the elementary grades and the first two years of high school. These are "pre-vocational education."

The definition for pre-vocational education is "programs, services, or activities designed to provide youth and adults with orientation, guidance, exploration, and instruction to assist them in making meaningful career decisions and planning an appropriate Vocational Education program." The distinction between vocational and pre-vocational education becomes particularly important in considering the term "vocational program." It is defined as "an educational plan under which action can be taken by an individual to achieve a vocational objective." The objectives of Vocational Education and pre-vocational education as defined by the task force are not the same. Vocational Education's objective is preparation for employment; that of pre-vocational education stops short of preparation for employment.

The significance of this distinction is also evident in the definition of "secondary Vocational Education." As defined by the State Directors' task force, that means "Vocational Education provided to students who are in grades 7 through 12." Because the definition says "Vocational Education", any programs in grades 7-12 that do not include preparation for employment would not qualify. They would be pre-vocational education if they included only orientation, exploration, and instruction of a nature not directly related to preparation for employment.

This same distinction is found in the definition of a Vocational Education student. According to the State Directors' task force, a Vocational Education student is "an individual with a vocational objective enrolled in a Vocational Education program leading to entry or progress in a chosen occupational field." By this definition, most students below grade 10 are pre-vocational education students. Again the distinguishing criterion is the objective. Vocational Education students are enrolled in programs directly related to preparation for employment; those enrolled in programs without this objective are not Vocational Education students.

Another problem in defining Vocational Education students is cleared up in this definition. Is a student enrolled in a single Vocational Education course a Vocational Education student? The answer is yes if the course is identified by the State or local school as a program, assuming that completion of the course prepares a student for employment. The answer is no if the course is only one of a group or sequence, all of which together constitute preparation for employment.

Two other terms that have caused endless problems among the States are post-secondary and adult. Post-secondary is now defined as "Vocational Education conducted for youth or adults who have completed or left high school and who are enrolled in an organized program of study in preparation for entering or progressing in the labor market." Adult Vocational Education "means a course or courses conducted for persons who have completed or left high school to prepare them to enter, re-enter, or to progress in the work force." The essential difference is that post-secondary Vocational Education is "an organized program of study," whereas adult Vocational Education is merely "a course or courses."

Two related terms are also defined which refer to the Vocational Education received by adults. These are preparatory and supplementary. Preparatory as defined by the task force "means education, training, or retraining in a vocation or within an occupational cluster in which a marketable skill is acquired for entry or reentry into the labor market." Supplementary means "education and training to increase the skills, understandings, and appreciations needed by workers already in an occupation to upgrade or update their occupational competence."

Two more terms should be mentioned, not because they have created reporting problems, but because by their introduction into the focus of Vocational Education they have broadened the range of that term and caused a growing amount of confusion. One is career education, the other occupational education. Career education has been defined by the task force as "a process utilized in both school and community which enables individuals to make choices leading to success in life-long developmental patterns of living, learning, and working. It includes a sequence of educational experiences, throughout all of education consisting of development of self awareness, career awareness, exploration of options, decision-making, and preparation in one or more alternatives to achieve the individual's career objective." Career education thus becomes the umbrella covering academic education, Vocational Education, and professional education.

Occupational education, which was intended to broaden Vocational Education or perhaps serve as an umbrella also, has a significance primarily to post-secondary programs. The definition adopted is "any educational program with a direct career relationship. A broad generic term describing Vocational Education at the post-secondary level but not limited to any particular delivery system."

There are 45 definitions in the list drawn up by the State Directors' task force. Each has been carefully and thoroughly examined, discussed, revised, revised again, and agreed to. Unanimous agreement was seldom achieved except through compromise. No one on the task force emerged after five lengthy sessions of two or three days each with his or her own preferred definitions unscathed. Nor are the definitions weak or vacilating, as the results of compromise often are. They are clearer, more concise, and less ambiguous than before, and are capable of improving considerably both the information about and the decision-making process for Vocational Education in the United States.

APPENDIX A

National Summary: Vocational Education
Fiscal Years 1971 Through 1974

Total Enrollment in Vocational Education. The total enrollment in Vocational Education in 1970-71 was 10,485,233. It increased 10.43 percent in 1971-72 to 11,578,609; increased 4.20 percent in 1972-73 from the previous year, to 12,064,761; and increased 12.00 percent in 1973-74, to 13,512,060. During the four years, the total change was an increase of 3,026,827 students, or 28.87 percent.

Secondary Vocational Education. The enrollment in secondary Vocational Education in 1970-71 was 6,487,446. In 1971-72, it increased 11.16 percent, to 7,211,527. In 1972-73, it increased 1.90 percent from the previous year, to 7,348,666; and in 1973-74, it increased 14.13 percent, to 8,387,026. The total change in the four years was an increase of 1,899,580 students, or 29.28 percent.

Post-secondary Vocational Education. Post-secondary Vocational Education enrollment in 1970-71 was 1,116,044. It increased 14.46 percent in 1971-72, to 1,277,456; increased 5.64 percent in 1972-73 from the previous year, to 1,349,465; and increased 17.93 percent in 1973-74, to 1,591,400. During the four years, the total change was an increase of 475,356 students, or 42.59 percent.

Adult Vocational Education. The enrollment in adult Vocational Education in 1970-71 was 2,881,735, which increased 7.21 percent, to 3,089,626, in 1971-72. In 1972-73, the enrollment increased 8.97 percent from the previous year, to 3,366,630; and in 1973-74, it increased 4.96 percent, to 3,533,634. The total change in the four-year period was an increase of 651,899 students, or 22.62 percent.

Total Vocational Education Enrollment Related to Population. In 1970-71, Vocational Education enrolled 50.19 persons out of each 1,000 in the general population. The figure increased by 9.32 percent in 1971-72, to 54.87 persons per 1,000. In 1972-73, it increased 3.37 percent from the previous year, to 56.72 persons per 1,000; in 1973-74, it increased 11.02 percent, to 62.97 persons per 1,000. In the four years, the total change in enrollment per 1,000 general population was an increase of 12.78 persons per 1,000, or 25.46 percent.

Secondary Vocational Education Related to Population. In 1970-71, secondary Vocational Education enrolled 31.90 percent of the population 15-19 years of age. In 1971-72, the enrollment of that population group increased 3.20 percentage points, to 35.10 percent. In 1972-73, that enrollment increased 0.39 percentage points from the previous year, to 35.49 percent. In 1973-74, it increased 4.65 percentage points, to 40.14 percent. During the four years, the total change in secondary enrollment as a percent of the target population was an increase of 8.24 percentage points.

Post-secondary Vocational Education Related to Population. Post-secondary Vocational Education enrolled 6.46 percent of the population 20-24 years of age in 1970-71. That enrollment increased 0.86 percentage points in 1971-72, to 7.32 percent. In 1972-73, it increased 0.36 percentage points from the previous year, to 7.68 percent, and in 1973-74, it increased 1.30 percentage points, to 8.98 percent. In the four-year period, the total change in post-secondary enrollment as a percent of the target population was an increase of 2.52 percentage points.

Adult Vocational Education Related to Population. In 1970-71, 3.06 percent of the population 25-64 years of age was enrolled in adult Vocational Education. That figure increased 0.19 percentage points, to 3.25 percent, in 1971-72. In 1972-73, it increased 0.27 percentage points from the previous year, to 3.52 percent. In 1973-74, it increased 0.14 percentage points, to 3.66 percent. During the four years, the total change was an increase of 0.60 percentage points in adult Vocational Education as a percent of its target population.

Cooperative Vocational Education. In 1970-71, cooperative Vocational Education enrolled 4.99 percent of the total in secondary and post-secondary Vocational Education. The figure in 1971-72 increased 0.42 percentage points, to 5.41 percent. In 1972-73, it increased 0.43 percentage points from the previous year, to 5.84 percent; in 1973-74 it increased 0.23 percentage points, to 6.07 percent. In the four years, the total change in cooperative Vocational Education as a percent of total enrollment in secondary and post-secondary Vocational Education was an increase of 1.08 percentage points.

Work-Study Vocational Education. Work-study Vocational Education enrollment in 1970-71 was 0.38 percent of the total in secondary and post-secondary Vocational Education. In 1971-72, the work-study enrollment decreased 0.01 percentage point, to 0.37 percent. In 1972-73, it increased 0.02 percentage points from the previous year, to 0.39 percent. It increased in 1973-74 by 0.05 percentage points, to 0.44 percent. During the four years, the total change in work-study enrollment as a percent of total enrollment in secondary and post-secondary Vocational Education was an increase of 0.06 percentage points.

Enrollment of Disadvantaged Persons. The enrollment of disadvantaged persons in 1970-71 was 1,393,356, or 13.29 percent of the total Vocational Education enrollment. In 1971-72, the disadvantaged enrollment increased 15.42 percent, to 1,608,187; compared to total Vocational Education, it increased 0.60 percentage points. The disadvantaged enrollment in 1972-73 decreased 1.69 percent from the previous year, to 1,581,025; as a percent of total Vocational Education, it decreased 0.79 percentage points. In 1973-74, disadvantaged enrollment increased 3.22 percent, to 1,631,922; as a percent of total Vocational Education, it decreased 1.02 percentage points. The total four-year change in the disadvantaged enrollment was an increase of 17.12 percent. Figured as a percent of total Vocational Education enrollment, it decreased 1.21 percentage points, to 12.08 percent.

Enrollment of Handicapped Persons. The number of handicapped persons enrolled in 1970-71 was 202,910, or 1.94 percent of the total in Vocational Education. In 1971-72, the handicapped enrollment increased 9.06 percent, to 221,295; as a percent of total Vocational Education, it decreased

0.03 percentage points. The handicapped enrollment in 1972-73 increased 0.64 percent from the previous year, to 222,713; compared to total Vocational Education, it decreased 0.06 percentage points. In 1973-74, the enrollment increased 5.77 percent, to 235,569; as a percent of total Vocational Education, it decreased 0.11 percentage points. During the four years, the total change in the enrollment of handicapped persons was an increase of 16.10 percent. As a percent of total Vocational Education enrollment, it decreased 0.20 percentage points, to 1.74 percent.

Agriculture Education. The enrollment in agriculture education in 1970-71 was 844,505, or 8.04 percent of the total in Vocational Education. In 1971-72, agriculture increased 6.08 percent, to 895,866; as a percent of total Vocational Education, it decreased 0.36 percentage points. In 1972-73, the agriculture enrollment increased 3.49 percent from the previous year, to 927,141; figured as part of total Vocational Education, it decreased 0.07 percentage points. Agriculture enrollment in 1973-74 increased 5.23 percent, to 975,623; compared to total Vocational Education, it decreased 0.48 percentage points. In the four years, agriculture education enrollment increased a total of 15.53 percent. When figured as part of the total in Vocational Education, it decreased 0.91 percentage points, to 7.13 percent.

Distributive Education. Distributive education enrollment in 1970-71 was 578,066, or 5.51 percent of the total in Vocational Education. In 1971-72, the enrollment increased 10.74 percent, to 640,122; when compared to total Vocational Education, it decreased 0.02 percentage points. The 1972-73 enrollment increased 15.36 percent from the previous year, to 738,449; as a percent of total Vocational Education, distributive education increased 0.57 percentage points. In 1973-74 distributive education increased 12.86 percent, to 833,432; compared to total Vocational Education, it increased 0.03 percentage points. The total four-year change in distributive education enrollment was an increase of 44.18 percent. As a percent of total Vocational Education enrollment, it increased 0.58 percentage points, to 6.09 percent.

Health Occupations Education. The 1970-71 enrollment in health occupations education was 269,495, or 2.57 percent of the total in Vocational Education. The enrollment in 1971-72 increased 24.90 percent, to 336,611; as part of the total in Vocational Education, it increased 0.32 percentage points. In 1972-73, health occupations enrollment increased from the previous year by 25.07 percent, to 421,008; as a percent of the Vocational Education total, it increased 0.57 percentage points. In 1973-74, health occupations increased 20.16 percent, to 505,897; compared to total Vocational Education, it increased 0.24 percentage points. Over-all, the change in health occupations enrollment during the four years was an increase of 87.72 percent. As part of the total in Vocational Education, it increased 1.13 percentage points, to 3.70 percent.

Consumer and Homemaking Education. The enrollment in consumer and homemaking education in 1970-71 was 2,929,641, or 27.91 percent of the total in Vocational Education. In 1971-72, the enrollment increased to 3,162,732, a change of 7.96 percent; as a percent of total Vocational Education, it decreased 0.79 percentage points. In 1972-73, the consumer and homemaking enrollment increased 0.75 percent from the previous year, to 3,186,476; compared to the total in Vocational Education, it decreased 0.97

percentage points. In 1973-74, the enrollment increased 0.51 percent, to 3,202,761; as a percent of Vocational Education, it decreased 2.75 percentage points. During the four years, the over-all change in consumer and homemaking education enrollment was an increase of 9.32 percent. Figured as part of total Vocational Education enrollment, it decreased 4.51 percentage points, to 23.40 percent.

Occupational Home Economics Education. Occupational home economics education enrollment in 1970-71 was 196,695, or 1.87 percent of the total in Vocational Education. The enrollment increased in 1972-73 by 41.90 percent, to 279,118; compared to total Vocational Education, it increased 0.52 percentage points. In 1972-73, the enrollment increased 15.61 percent from the previous year, to 322,696; as a percent of Vocational Education, it increased 0.26 percentage points. In 1973-74, the enrollment increased to 495,978, a change of 53.70 percent; as part of total Vocational Education, it increased 0.97 percentage points. Altogether in the four-year period, enrollment in occupational home economics education increased 152.16 percent. As a percent of the total enrollment in Vocational Education, it increased 1.75 percentage points, to 3.62 percent.

Office Occupations Education. In 1970-71, the enrollment in office occupations education was 2,224,773, or 21.19 percent of the total in Vocational Education. In 1971-72, the enrollment increased to 2,349,977, a change of 5.63 percent; as a part of total Vocational Education, it decreased 1.04 percentage points. In 1972-73, the enrollment in office occupations education increased 6.28 percent from the previous year, to 2,497,558; compared to total Vocational Education, it increased 0.35 percentage points. The enrollment in 1973-74 increased 10.41 percent, to 2,757,640; as a percent of Vocational Education, it decreased 0.35 percentage points. Over-all, the change in the enrollment in office occupations education during the four years was an increase of 23.95 percent. Figured as part of the total in Vocational Education, the enrollment decreased 1.04 percentage points, to 20.15 percent.

Technical Education. The 1970-71 enrollment in technical education was 313,002, or 2.98 percent of the total in Vocational Education. In 1971-72, the enrollment increased 7.55 percent, to 336,639; as a percent of total Vocational Education, it decreased 0.09 percentage points. The technical education enrollment in 1972-73 increased 8.10 percent from the previous year, to 363,909; compared to total Vocational Education, it increased 0.10 percentage points. In 1973-74, the enrollment increased 8.04 percent, to 393,185; as a part of Vocational Education, it decreased 0.12 percentage points. The net change in the technical education enrollment during the four years was an increase of 25.62 percent. As a percent of the total enrollment in Vocational Education, the net change was a decrease of 0.11 percentage points, to 2.87 percent.

Trade and Industrial Education. Trade and industrial education enrolled 2,073,192 students in 1970-71, or 19.75 percent of the Vocational Education total. In 1971-72, the trade and industrial enrollment increased 15.49 percent, to 2,394,334; when compared to total Vocational Education, it increased 0.78 percentage points. In 1972-73, the enrollment increased 12.66 percent from the previous year, to 2,697,394; as a percent of Vocational Education enrollment, it increased 1.61 percentage points. In 1973-74, trade and industrial enrollment increased to 2,821,170, a change of 4.59 percent; as part of the total in Vocational Education, it decreased 1.53 percentage points. During the four years, the over-all change in trade and industrial education enrollment was an increase of 36.08 percent. Expressed as a percentage of the total in Vocational Education, it increased 0.86 percentage points, to 20.61 percent.

American Indian. In 1970-71, American Indians accounted for 0.49 percent of the total enrollment in Vocational Education. This was 0.10 percentage points more than the 0.39 percent of the general population that was American Indian. In 1971-72, the Indian enrollment was 0.84 percent of the total, or 0.45 percentage points more than the Indians' share of the general population. Similar data could not be determined for 1972-73 and 1973-74, because the U.S. Office of Education stopped requiring this information.

Black. Of those enrolled in Vocational Education in 1970-71, 18.95 percent were Black. This figure was 7.84 percentage points more than the 11.11 percent of the general population that was Black. In 1971-72, Blacks made up 16.61 percent of the total enrollment; this was 5.50 percentage points more than the percent of Blacks in the general population. Similar data could not be determined for 1972-73 and 1973-74, because the U.S. Office of Education stopped requiring this information.

Oriental. In 1970-71, the enrollment of Orientals was 0.70 percent of the total in Vocational Education. This was 0.19 percentage points more than the 0.51 percent of the general population that was Oriental. In 1971-72, the enrollment of Orientals was 1.00 percent of the total, 0.49 percentage points more than Orientals in the general population. Similar data could not be determined for 1972-73 and 1973-74, because the U.S. Office of Education stopped requiring this information.

Spanish-surnamed. The enrollment of Spanish-surnamed persons was 5.89 percent of the total in Vocational Education in 1970-71. In 1971-72, it was 6.06 percent of the total. In 1972-73 and 1973-74 similar data were not available. Total population figures for Spanish-surnamed persons were not available.

Other. Other persons constituted 73.76 percent of the total Vocational Education enrollment in 1970-71. This was 14.23 percentage points less than the 87.99 percent of the general population that was other. In 1971-72, others made up 85.30 percent of the total enrollment; this was 2.69 percentage points less than the percent of others in the general population. Similar data could not be determined for 1972-73 and 1973-74, because the U.S. Office of Education stopped requiring this information.

Female and Male. In 1970-71, females accounted for 55.4 percent of the total enrollment in Vocational Education; conversely, males made up 44.6 percent. In 1971-72, the enrollment was 55.5 percent female, 44.5 percent male; the change in the balance was 0.1 percentage point. Similar data could not be determined for 1972-73 and 1973-74, because the U.S. Office of Education stopped requiring this information.

APPENDIX A -- 6

Total Reported Dollar Expenditures in Vocational Education, All Levels. In 1970-71, the total expenditure of Federal, State and local monies for all levels of Vocational Education was $2,399,025,018. This expenditure increased to $2,657,548,731 in 1971-72; increased to $3,030,657,492 in 1972-73, and increased to $3,547,889,028 in 1973-74.

Total Reported Expenditure Per Student in Vocational Education, All Levels. The total, or average, expenditure per student in Vocational Education, including all levels and all programs, in 1970-71 was $228.80. That expenditure increased to $229.52 in 1971-72, increased to $251.20 in 1972-73, and increased to $262.57 in 1973-74.

Total Reported Expenditure Per Student in Secondary Vocational Education. The expenditure per student in secondary Vocational Education in 1970-71 was $238.19; this included Federal, State and local monies for all secondary programs. In 1971-72, this expenditure increased to $242.16; in 1972-73 it increased to $270.60; and in 1973-74 it decreased to $254.10.

Total Reported Expenditure Per Student in Post-secondary Vocational Education. Including Federal, State and local monies, and all programs at the post-secondary level, the average expenditure per student in post-secondary Vocational Education in 1970-71 was $554.47. It decreased to $549.40 in 1971-72, increased to $623.98 in 1972-73, and decreased to $604.64 in 1973-74.

Total Reported Expenditure Per Student in Adult Vocational Education. In 1970-71, the total expenditure per student in adult Vocational Education was $74.46; this included Federal, State and local monies, and all programs at the adult level. This expenditure decreased to $64.05 in 1971-72, decreased to $56.59 in 1972-73, and increased to $70.40 in 1973-74.

Reported Expenditure for Disadvantaged Persons. The expenditure for disadvantaged persons in Vocational Education in 1970-71 was $229,837,957, which was 9.58 percent of the total expenditure for Vocational Education. In 1971-72, the expenditure for disadvantaged persons was $288,180,660; this was 10.84 percent of the total, an increase of 1.26 percentage points. In 1972-73, the expenditure was $318,917,868, or 10.52 percent of the total, for a decrease of 0.32 percentage points from the previous year. In 1973-74, the expenditure was $309,475,356, or 8.72 percent of the total, a decrease of 1.80 percentage points. Altogether during the four years, the expenditure for disadvantaged persons, expressed as part of the total for Vocational Education, decreased 0.86 percentage points.

Reported Expenditure for Handicapped Persons. The expenditure for handicapped persons in Vocational Education in 1970-71 amounted to $62,424,962; this represented 2.60 percent of the total expenditure for Vocational Education. The expenditure for handicapped persons in 1971-72 was $66,250,041, or 2.49 percent of the total, a decrease of 0.11 percentage points. The expenditure in 1972-73 was $94,304,724; this was 3.11 percent of the total, an increase of 0.62 percentage points from the previous year. The 1973-74 expenditure was $83,040,479, or 2.34 percent of the total, a decrease of 0.77 percentage points. In the four years, the total change in the expenditure for the handicapped, expressed as a percent of the total expenditure for Vocational Education, was a decrease of 0.26 percentage points.

Ratio of Reported State and Local Expenditures to Federal Expenditures. In 1970-71, State and local expenditures for Vocational Education added up to $2,005,098,155, while the Federal expenditure was $393,926,863; the ratio of State and local monies to Federal monies was $5.09:1. The State and local expenditures in 1971-72 totaled $2,192,214,457, compared to a Federal expenditure of $465,334,274; the resulting ratio was $4.71:1. In 1972-73, State and local expenditures were $2,548,840,378, and the Federal expenditure was $481,817,114, for a ratio of $5.29:1. In 1973-74, State and local expenditures amounted to $2,996,446,575, and the Federal expenditure to $551,442,453; the ratio was $5.43:1.

Placement of All Persons Receiving Vocational Education, At All Levels. In 1970-71, the total number of persons who completed a Vocational Education program was 1,493,247; the total of those who left prior to completion with marketable skills was 122,803. Of the combined total, 819,109 were known to be available for work. Follow-ups determined that 45.05 percent of all completers and early leavers were employed, and 88.89 percent of those available for work were employed.

The number of completers in 1971-72 was 1,588,603; the number of early leavers was 135,501. Of the combined total, 968,050 were known to be available for work. Follow-ups determined that 50.95 percent of all completers and early leavers were employed, and 90.74 percent of those available for work were employed.

In 1972-73, there were 1,938,379 completers and 110,377 early leavers; of these, 1,094,419 were known to be available for work. Follow-ups determined that 48.58 percent of all completers and early leavers were employed, and 90.94 percent of those available for work were employed.

The number of completers in 1973-74 was 2,111,032, and the number of early leavers was 218,556. Of these two groups, 1,204,923 were known to be available for work. Follow-ups determined that 46.49 percent of all completers and early leavers were employed, and 89.89 percent of those available for work were employed.

Placement of All Persons Receiving Secondary Vocational Education. The number of persons who completed a secondary Vocational Education program in 1970-71 was 1,003,491; the number who left prior to completion with marketable skills was 38,667. Of the combined total, 509,490 were known to be available for work. Follow-ups determined that 42.77 percent of all completers and early leavers were employed, and 87.48 percent of those available for work were employed.

The number of completers in 1971-72 was 1,049,061; the number of early leavers was 40,145. Of the two groups, 575,155 were known to be available for work. Follow-ups determined that 47.03 percent of all completers and early leavers were employed, and 89.06 percent of those available for work were employed.

In 1972-73, 1,153,873 persons completed a program; the number of persons who left prior to completion with marketable skills was not available. Of the completers, 603,360 were known to be available for work. Follow-ups determined that 89.84 percent of those available for work were employed.

In 1973-74, there were 1,287,874 completers and the number of early leavers was not available; of the completers, 682,064 were known to be available for work. Follow-ups determined that 88.57 percent of those available for work were employed.

Placement of All Persons Receiving Post-secondary Vocational Education. In 1970-71, the number of those who completed a post-secondary Vocational Education program totaled 324,531; the number who left prior to completion with marketable skills totaled 71,661. Of the two groups, 210,604 were known to be available for work. Follow-ups determined that 49.07 percent of all completers and early leavers were employed, and 92.31 percent of those available for work were employed.

In 1971-72, the number of completers was 341,682, and the number of early leavers was 80,503. Of the combined total, 258,628 were known to be available for work. Follow-ups determined that 57.30 percent of all completers and early leavers were employed, and 93.53 percent of those available for work were employed.

The number of completers in 1972-73 was 419,054, and the number of early leavers was not available; of the completers, 283,015 were known to be available for work. Follow-ups determined that 92.88 percent of those available for work were employed.

In 1973-74, 527,724 persons completed a program; the number who left prior to completion with marketable skills was not available. Of the completers, 359,848 were known to be available for work. Follow-ups determined that 92.17 percent of those available for work were employed.

Placement of Persons Receiving Preparatory Adult Vocational Education. In 1970-71, the number of persons who completed an adult preparatory Vocational Education program was 165,225; the number who left prior to completion with marketable skills was 12,475. Of the total, 99,015 were known to be available for work. Follow-ups determined that 49.50 percent of all completers and early leavers were employed, and 88.83 percent of those available for work were employed.

There were 197,860 completers in 1971-72, and 14,853 early leavers; of these, 134,267 were known to be available for work. Follow-ups determined that 58.43 percent of all completers and early leavers were employed, and 92.57 percent of those available for work were employed.

In 1972-73, the number of completers was 365,452, and the number of early leavers was not available. Of the completers, 208,044 were known to be available for work. Follow-ups determined that 91.51 percent of those available for work were employed.

The number of completers in 1973-74 was 295,434; the number of early leavers was not available. Of the completers, 163,011 were known to be available for work. Follow-ups determined that 90.38 percent of those available for work were employed.

APPENDIX B

Table 1 - Vocational Education Teacher and Counselor Assignments, Fiscal Year 1974

	States in which Voc. Education Teachers Teach Non-Vocational Subjects		States in which Voc. Education Teachers Serve as Counselors			Type of Counselors Available to Vocational Education Students		
	Do	Do Not[1]	Do	Do Not	Unofficially	Voc. Ed. Counselor	Regular Counsel.	Both Voc. Ed. & Reg.
Alabama		X			X			X
Alaska	X		X				X	
Arizona	X			X				X
Arkansas	X			X				X
California	X				X			X
Colorado	X				X			X
Connecticut		X			X			X
Delaware	X			X		X		
Dist. of C.		X			X	X		
Florida	X				X			X
Georgia		X			X		X	
Hawaii	X				X		X	
Idaho	X			X				X
Illinois	X				X		X	
Indiana	X				X			X
Iowa	X		X			X		
Kansas	X				X		X	
Kentucky	X			X				X
Louisiana		X			X		X	
Maine	X				X			X
Maryland	X							
Massachusetts		X			X		X	
Michigan	X			X			X	
Minnesota		X			X			X
Mississippi		X		X				X
Missouri		X		X			X	
Montana	X			X				X
Nebraska	X			X			X	
Nevada	X				X			X
New Hampshire	X				X		X	
New Jersey	X			X				X
New Mexico	X			X				X
New York		X		X			X	
N. Carolina		X			X			X
N. Dakota		X			X			X
Ohio	X		X					X
Oklahoma		X		X				X
Oregon[2]	X				X			X
Pennsylvania		X		X				X
S. Carolina		X		X				X
Tennessee		X		X				X
Texas		X		X				X
Utah	X			X			X	
Vermont	X			X			X	
Virginia		X			X		X	
Washington	X		X					X
W. Virginia	X				X			X
Wisconsin	X		X					
Wyoming	X			X			X	
Puerto Rico		X		X		X		

[1] In most States teachers teaching non-voc classes are not reimbursed with vocational funds.

[2] Some teach supporting and/or related courses, i.e. industrial arts.

Source: Data collected by Project Baseline.

APPENDIX B -- 2

Table 2 - Vocational Education Teacher Shortages in 49 States, Fiscal Year 1974

	Vocational Education Teacher Shortage				Shortage by Level			Shortage by Occupational Areas								
STATES	None	Some	Moderate	Great	Sec.	P-S	Adult	Counseling	AG	DE	Health	Office	T & I	Ind. Arts	Co-op	All Areas
Alabama				X	X	X	X	X				X				
Alaska		X			X							X	X	X		
Arizona		X			X	X					X		X			
Arkansas		X				X			X				X			
California		X														
Colorado		X			X				X	X	X		X			
Connecticut		X			X								X			
Delaware[1]			X		X				X				X	X		
Dist. of C.			X			X										
Florida			X													
Hawaii		X			X								X			
Idaho		X				X							X			
Illinois			X		X			X	X		X		X		X	
Indiana			X		X				X		X		X	X		
Iowa			X						X			X		X		
Kansas				X	X	X	X	X	X	X	X	X		X	X	
Kentucky	X															
Louisiana			X		X								X			
Maine		X			X			X	X							
Massachusetts	X															
Michigan		X			X				X	X			X			
Minnesota		X			X											X
Mississippi	X															
Missouri				X	X	X										
Montana		X			X	X			X	X			X			
Nebraska		X			X	X			X		X		X			
Nevada			X		X				X				X			
New Hampshire				X	X					X	X			X		
New Jersey		X					X									
New Mexico			X		X	X		X	X	X			X		X	
New York		X			X					X		X				
N. Carolina			X		X				X	X	X		X			
N. Dakota			X		X				X	X						
Ohio			X		X	X	X		X				X			
Oklahoma		X			X		X						X			
Oregon		X			X		X		X	X	X					
Pennsylvania		X			X		X	X		X	X		X	X	X	
S. Carolina				X	X	X	X									X
S. Dakota	X															
Tennessee				X	X	X	X		X		X		X			
Texas	X															
Utah	X															
Vermont		X			X				X							
Virginia				X	X				X				X	X		
Washington				X	X		X		X	X	X		X			
W. Virginia			X		X	X			X	X	X		X			
Wisconsin		X									X		X			
Wyoming			X		X				X	X	X					
Puerto Rico[2]				X	X	X		X		X	X		X	X		

[1] Delaware also shows a teacher shortage in Voc./Special Education.

[2] Puerto Rico also shows a teacher shortage in the technical education field.

Source: Data collected by Project Baseline.

APPENDIX B -- 3

Table 3 - Career Education in Twenty-nine States, Fiscal Year 1974

States	Number of Students Enrolled	Funding Sources		Expenditures $
		Federal	State/Local	
Alabama	165,122	X	X	850,111
Arizona	217,000		X	4,600,000
California	1,850,000	X	X	
Dist. of C.[1]	15,467	X		
Georgia	10,980			120,000
Hawaii	ALL (K-12)	X	X	
Illinois[2]	1,134,528	X	X	219,694,396
Iowa	185,843			
Kansas	140,000	X	X	264,443
Kentucky	86,571	X		
Maryland	182,000	X		128,836
Mass.	80	X		
Minnesota	450,000			
Mississippi	60,000	X	X	373,340
Missouri	150,261		X	270,764
Montana	16,500	X		199,000
New Jersey	50,000			
New York	103,036	X		1,318,038
N. Dakota	40,344	X	X	235,237
Ohio	148,374			
Oklahoma	4,807			
Rhode Is.	5,000	X		250,000
Texas	212,773	X	X	1,404,569
Utah		X	X	68,000
Vermont	13,858	X	X	281,981
Washington	296,154		X	125,000
Wisconsin			X	
Wyoming	1,500	X	X	104,744
Puerto Rico	18,545	X		191,755

[1] Part D Career Education Exemplary Project.

[2] These figures include all grades K-adult as Vocational Education is considered by Illinois as an integral part of career education. Within the above figures 500,684 elementary students (K-8) were involved in vocational information programs supported by $378,853 of State funds.

Source: Data collected by Project Baseline.

APPENDIX C

Measuring the Impact of Research and Demonstration Projects on Vocational Education, by LaRue Miller, Research Associate, Project Baseline, Northern Arizona University.

Federally administered exemplary (Part D) projects.

The federally administered exemplary projects were identified by the USOE publication *Abstracts of Exemplary Projects in Vocational Education*. Only those projects scheduled to terminate during or before FY 1974 and conducted in the 50 States and the District of Columbia were investigated. Fifty-four of the projects were included in this report.

Because these projects were funded at a considerably higher level than the State-administered projects and many of their final reports were available through the Educational Research Information Center (ERIC), an effort was made to read each final report before calling the project director or other person closely connected with the project. Final reports and/or interim reports were read for all of the projects either through ERIC or, if not yet available there, by requesting that a copy be mailed to Project Baseline.

The information assembled about each project included the following items:

1. Whether the local district or the State is continuing the project or major segments of it without Federal funds.

2. Whether the methods and ideas developed through the project is being used (a) in other schools in the original district, and (b) in other districts in the State.

3. Whether there has been increase of interest in, cooperation with, and/or approval of the school programs by business, industry, and community as a direct result of the program.

4. Whether studies have been done or are being planned to determine the results of the project in ter[illegible]f changes in students, or reduced dropout rates, through follow-up or other methods.

While the final reports addressed some of these areas, the project personnel could not always predict accurately in those reports the extent to which the projects would be funded locally after Federal funding ceased. Telephone calls provided more complete information from a perspective of one to two years after the close of the project.

Following the collection of information, the projects were grouped into five categories of impact: 1) extensive within original State and having some implementation in districts outside the State; 2) extensive within the State but no definite evidence of further spread; 3) implementation in a few additional areas of the State as well as spread in original district; 4) implementation in original district only: 5) little or no implementation or spread even in original district. Once the projects were charted within groups in that order, other characteristics were plotted in an attempt to determine whether patterns or characteristics showed commonalities in the more widely accepted programs that did not exist for the programs with less implementation.

Two characteristics of the more extensively implemented projects did stand out. These were the sets of goals and objectives together with the evaluation designs intended to measure their accomplishment, and the relative stress placed on teacher orientation and training in the final reports. While no objective measuring scales had been established for either of these characteristics, any examples that appeared to the researcher to be outstanding had been noted during the reading of the final reports. Some evaluation designs appeared to relate to relatively pointless sets of objectives, and those also were noted. Notations of outstanding evaluation design were common to half of the 16 most widely spread programs and common to less than one-eighth of the remaining 38 programs.

Inservice teacher training programs were stressed in the descriptions of half of the programs for which at least some implementation occurred outside the original district, but only one-fifth of the programs with either no implementation or only in the district contained a similar stress. A comparison of these characteristics by impact level is shown in Table C-1 (APPENDIX C -- 6).

State-administered research (Part C) projects.

The set of State-administered projects was limited to those funded during FY 1972 or earlier in an effort to assure that enough time had passed since the project was conducted to allow those involved to assess its impact and judge its value. A few of the projects were continued beyond 1972, but that fact was not available on the information in the Project Baseline offices. USOE publication State-Administered Research and Development Projects in Vocational Education, FY 1971, FY 1972, listed a total of 1,142 Part C projects funded for FY 1971 and 1972. Due to the relatively large number of projects a stratified random sample was chosen. The stratification was based on the project classification scheme described in "The Impact of Vocational Education Research at the Federal and State Levels," a supplemental report published by Project Baseline in 1974. This scheme divided the projects on the basis of primarily statewide or primarily local focus, and subdivided the projects on the basis of whether their intended impact was primarily policy, administrative (including guidance), or instructional. Each of these subdivisions was further categorized into one of the research levels of identification, clarification, solution, implementation and evaluation.

Some of the categories, such as research for instructional solution or implementation, included several hundred of the projects, and most of these seemed very similar. Thus it was felt that three to five percent of those projects would be adequate, compared to a somewhat higher percentage of the projects in other categories. At least one project was included for every category in which projects were done. The selection procedure resulted in a sample of 96 projects (8.4 percent).

Because the sample was, within the stratification, chosen at random, any project within a category had an equal chance of being selected. The individual States were not identified during the selection process, so a set of projects chosen from any State was not a random sample of its work. In fact, for some States the projects chosen were all outstanding, while for others most of the projects in the sample were among their most unexciting. Thus, comments on individual examples are not identified by State, and no conclusions about any State should be drawn.

Once the selection of projects had been made, information about each project was obtained by telephone. In most cases the person contacted was the director of the research coordinating unit or research and development unit. Occasionally project directors or school district personnel were contacted.

Using the information derived from the telephone conversations, the following items of information were charted by category.

1. The basic content of a project.

2. Whether the project or the methods developed were continuing in the original site with local funds.

3. Whether the project methods had been implemented in additional schools or school districts, either within or outside the State, and whether this implementation was widespread.

4. For projects without an implementation component, whether the results were currently being used, and to what extent.

Information about the basic intent of each project was used both to find out the nature of its impact and to validate the classification scheme. For validation purposes, the information provided a cross check for the supposition that most of the time the writers of project proposals convey the basic intent accurately through the choice of title. The extent of impact was divided into five levels. (1) Highest. Widely implemented or used; i.e. for the State-administered projects this category ranged from statewide implementation or use for decisions affecting State policies to implementation in half a dozen small districts or all schools of a given age level in at least two large districts. (2) Good. Implementation in original site and a few additional sites. This category was limited to projects of the implementation type rather than those that may have been used as a basis for further research or for policy or administrative decisions. These projects were known to have spread to at least one other school or district. (3) Moderate.

Implemented only in original site. This cateogry also included only projects for which the word "implemented" was appropriate. (4) Some. Results used. This category included those projects that were used as a basis for additional research or whose use in State or local policy or administrative decisions was limited but definite. It also included projects in which materials were developed and are used in the classroom but have not become accepted for large numbers of classrooms. (5) Lowest. Little or no known current use. This category included projects that, however interesting the results may look, had not been used for anything. It also included any project that no one could specifically identify.

When the projects had all been categorized by level of impact, they were examined to determine whether any categories of projects seemed more likely than others to have an extensive impact. With only two exceptions, the impact levels seemed to be evenly distributed throughout the types. Projects intended to provide information for statewide policy decisions seemed to be more likely than most to have been used extensively. Conversely, local projects intended to provide evaluations of classroom programs seemed least likely to have any impact. Following that examination, the impact levels were subdivided by funding level, number of years funded, and sponsoring agency. Table C-2 shows the results (APPENDIX C -- 7).

State-administered exemplary (Part D) projects.

The USOE publication entitled State-Administered Exemplary Projects in Vocational Education, FY 1970, FY 1971, FY 1972, listed 725 Part D projects. As with Part C, a stratified random sample was selected. The Part D subdivisions were based on the categories stated in the Vocational Amendments of 1968; cooperation between education and manpower, young people in post-secondary education, out-of-school youth and adults, and young people still in school (secondary or younger). Each of these subdivisions was further categorized into one of the five areas of counseling and placement, career awareness and exploration or career development, work experience, cooperative education, and vocational instruction. The number of projects in the sample was 59 (8.1 percent).

The same type of information about the projects was sought for Part D as for Part C, both in final reports and in telephone conferences.

In those States where the research coordinating unit, was responsible for both Part C and Part D projects, the RCU director was called. Responsibility for Part D projects in some States was under a separate person in the Department of Vocational Education. In most such cases, both the RCU director and the Part D supervisor or officer were called. Again, the information sometimes was gathered from project directors or local education administrators.

Even though the Part D projects were designed primarily for implementation rather than as basic research, the same five levels of impact were appropriate. A research project would more likely fall into impact level four, and an exemplary project into level two or three, because exemplary projects are nearer the implementation stage in the research and demonstration continuum than strictly research projects. But the same implementation scale still serves both as long as they are examined separately.

None of the categories as originally established contained a majority of either high or low impact projects. The high and medium impact set was distributed evenly over all the categories. Following the examination of impact level by category, the projects were subdivided by funding level, number of years funded, sponsoring agency, and grade level toward which directed. The results are shown in Table C-3 (APPENDIX C -- 8).

The statistical analyses were done on the composite set of Part C and Part D State-administered projects. Two separate analyses were used to establish confidence levels for the State-administered project samples. The first was based on the extent of spread of the projects. The second related to the categories from which projects were chosen for the sample.

Using a 95 percent confidence interval, which basically means that there is a 95 percent probability that the proportion of all the projects conducted lies within the stated interval, between 19 percent and 38 percent of the 1967 Part C and Part D projects have been widely implemented or used. Similarly, between 24 percent and 39 percent of the projects are continuing in the original site and a few additional sites, while the proportion of projects not being used at all lies between two percent and nine percent.

Confidence intervals were also calculated with regard to the categories in which the projects were classified. Based on the information about project intent derived from the telephone calls, 61 of the projects (39 percent) had been classified accurately. Fifty-six of the projects (36 percent) included the classification chosen as a major segment of their intent, but also included at least one other category as equally important. Twenty-four (15 percent) of the project classifications were close, but not accurate. For example, several projects whose major project intent was categorized appropriately had been classified as being intended to impact locally, whereas they actually had been designed as statewide programs, or vice versa. In other cases it was difficult to distinguish from the title between policy clarification and policy solution. Finally, 14 (nine percent) project classifications were substantially incorrect. However, the accuracy of project classification in no way interferes with the composite data on use and diffusion of projects.

Calculation based on the 95 percent level of confidence shows the actual proportion of correctly classified projects to lie between 32 percent and 47 percent, while the proportion of projects that included the assigned classification as one major segment of the intent lies between 29 percent and 44 percent. The proportion of projects classified incorrectly would lie between 4.5 percent and 13.5 percent.

Table C-1 - A Comparison of Selected Characteristics of Federally Administered Exemplary Projects By Impact Level

Characteristics	Impact Level				
	Highest (4 Projects)	Extensive in State (12 Projects)	Some Beyond District (24 Projects)	In District Only (8 Projects)	Minimal (6 Projects)
Evaluation design emphasized, continuing system	50%	50%	13%	0	0
Teacher training emphasized	100%	42%	50%	25%	17%
Business interest: increased substantially	75%	42%	42%	25%	0
" somewhat	25%	50%	46%	38%	67%
Academic gains noted in final reports	25%	50%	21%	25%	17%
Projects began during period March through June	100%	50%	29%	38%	50%

Source: Data collected by Project Baseline from individual projects.

Table C-2 - Federally Administered Part C Impact Level Compared With Funding Level, Years of Funding and Type of Sponsoring Agency

A. Impact level versus funding level

	Highest	Good	Moderate	Some	Lowest
Over $60,000	7	0	2	1	0
$30,000-$60,000	2	2	1	5	1
$15,000-$30,000	6	2	2	9	1
Under $15,000	13	17	6	15	4

B. Impact level versus years of funding

Two years	11	6	3	5	0
One year	17	15	9	28	6

C. Impact level versus type of sponsoring agency

State Dept. (Including RCU)	6	1	0	3	3
University or College	10	8	4	11	2
AVTS or Technical College	3	4	1	4	0
Community College	1	1	1	5	1
LEA	5	6	2	5	2
Other	3	1	3	2	1

Table C-3 - Comparison of State-Administered Exemplary (Part D) Impact Level Versus Funding, Number of Years Funded, Sponsoring Agency, and Grade Level at Which Directed

A. Impact level versus funding

	Highest	Good	Moderate	Some	Lowest
Over $60,000	5	3	2	0	0
$30,000-$60,000	1	6	6	0	0
$10,000-$30,000	3	9	7	2	0
Under $10,000	3	7	2	1	2

B. Impact level versus number of years funded

Three Years	3	4	5	1	0
Two Years	5	5	5	1	0
One Year	4	16	7	1	2

C. Impact level versus type of sponsoring agency

State Dept. (Including RCU)	4	3	1	0	2
University or College	0	2	3	1	0
AVTS or Community College	4	4	5	0	0
LEA	4	15	8	2	0
Other	1	1	0	0	0

D. Impact level versus grade level toward which project was directed

K-14	1	1	0	0	0
K-12	0	0	1	0	0
Post-secondary	1	4	6	0	0
Secondary and Post-secondary	5	2	6	1	0
Secondary	5	13	3	2	2
Pre-secondary	0	5	1	0	0

APPENDIX D

STATE MANAGEMENT INFORMATION PROCESSING, SUBSYSTEM AUTOMATION & TYPE OF INPUT

PRESENT & FUTURE

	1975-76 MANAGEMENT INFORMATION PROCESSING															MANAGEMENT INFORMATION PROCESSING PLANNED FOR FY 1978							
	AUTOMATED SUBSYSTEMS				SCOPE OF WORK			DATA INPUT ON INDIVIDUAL INPUT RECORD				DATA INPUT ON AGGREGATE RECORD				DATA INPUT ON INDIVIDUAL INPUT RECORD				DATA INPUT ON AGGREGATE RECORD			
STATES	ENRL	FLUP	PERS	FINA	SEC	P-SEC	ADULT	ENRL	FLUP	PERS	FINA	ENRL	FLUP	PERS	FINA	ENRL	FLUP	PERS	FINA	ENRL	FLUP	PERS	FINA
ALABAMA	X	X			X	X	X	TOTAL	TOTAL														
ALASKA	X				X			SEC										TOTAL					TOTAL
ARIZONA	X	X			X	X	X	TOTAL	TOTAL														
ARKANSAS	X	X	X	X	X	X		S/P-S	S/P-S					S/P-S	S/P-S	ADLT							
CALIFORNIA	X	X	X	X	X	X	X					TOTAL	TOTAL	TOTAL	TOTAL		TOTAL						
COLORADO	X	X	X	X	X	X	X	S/P-S	S/P-S	S/P-S		ADLT	ADLT	ADLT	TOTAL	ADLT							
CONNECTICUT	X	X	X		X	X	X					TOTAL	TOTAL	TOTAL									
DELAWARE	← MANUAL PROCEDURE →																						
DIST. OF COL.	← MANUAL PROCEDURE →																						
FLORIDA	X	X	X	X	X	X	X	S/A	S/A	S/A		P-SEC	P-SEC		TOTAL								
GEORGIA	X	X	X			X						P-SEC	P-SEC	P-SEC									
HAWAII	X	X	X	X	X	X		S/P-S	SEC	S/P-S	S/P-S						P-S						
IDAHO	← MANUAL PROCEDURE →															TOTAL	TOTAL						
ILLINOIS	X	X			X	X	X					TOTAL	TOTAL			TOTAL	TOTAL	TOTAL	TOTAL				
INDIANA	X	X	X		X	X	X					TOTAL	TOTAL	TOTAL									
IOWA	X	X		X	X	X	X				SEC	TOTAL	S/P-S					TOTAL					
KANSAS	X	X	X	X	X	X	X	TOTAL	TOTAL					TOTAL	TOTAL								
KENTUCKY	X	X	X	X	X	X	X	TOTAL	TOTAL	TOTAL					TOTAL								
LOUISIANA	← MANUAL PROCEDURE →																			TOTAL	TOTAL	TOTAL	TOTAL
MAINE			X		X					SEC						P-SEC							
MARYLAND	X	XX	X		X	X	X	TOTAL	TOTAL	TOTAL							TOTAL						
MASSACHUSETTS	X	X	X	X	X	X	X					TOTAL	TOTAL	TOTAL	TOTAL			TOTAL					
MICHIGAN	X	X	X	X	X	X	X					TOTAL	TOTAL	TOTAL	TOTAL	PS/A	PS/A		SEC				PS/A
MINNESOTA	X	X	X	X	X	X	X		TOTAL			TOTAL		TOTAL	TOTAL								
MISSISSIPPI	X	X	X	X	X	X	X					TOTAL	TOTAL	TOTAL									
MISSOURI	X	X	X	X	X	X	X	TOTAL	TOTAL	TOTAL													
MONTANA	X		X	X	X	X	X			TOTAL		SEC			TOTAL	TOTAL	TOTAL	TOTAL	TOTAL				
NEBRASKA	← MANUAL PROCEDURE →															TOTAL	TOTAL	TOTAL					
NEVADA		X			X				SEC														
NEW HAMPSHIRE	← MANUAL PROCEDURE →																			TOTAL	TOTAL	TOTAL	
NEW JERSEY	X				X							SEC			TOTAL	P-SEC	TOTAL	TOTAL					
NEW MEXICO	X	X	X	X	X	X	X	TOTAL	TOTAL						TOTAL								
NEW YORK	X	X	X	X	X	X	X	TOTAL	TOTAL	TOTAL					TOTAL								
NORTH CAROLINA	X	X	X	X	X	X	X	P-SEC		P-SEC		SEC	TOTAL	SEC	TOTAL								
NORTH DAKOTA		X	X	X	X	X	X			TOTAL			TOTAL		TOTAL					TOTAL	TOTAL		
OHIO	X	X	X	X	X	X	X					TOTAL	TOTAL	TOTAL	TOTAL								
OKLAHOMA	X	X	X	X	X	X	X	TOTAL	TOTAL	TOTAL	TOTAL												
OREGON	X	X	X		X			SEC	SEC	SEC				SEC	SEC								SEC
PENNSYLVANIA	X	X	X	X	X	X	X	TOTAL	TOTAL	TOTAL					TOTAL								
RHODE ISLAND	X	X	X		X	X	X	TOTAL	TOTAL	TOTAL									TOTAL				
SOUTH CAROLINA	X	X	X		X	X				S/P-S		S/P-S	S/P-S										
SOUTH DAKOTA	← MANUAL PROCEDURE →																						
TENNESSEE	X	X	X	X	X	X		S/P-S	S/P-S	S/P-S					P-SEC								
TEXAS	X	X	X	X	X	X	X	SEC	SEC	SEC		A/P-S											
UTAH	X				X	X	X	TOTAL									TOTAL	TOTAL	TOTAL				
VERMONT	← MANUAL PROCEDURE →																						
VIRGINIA	X	X			X		X		S/A			A/S											
WASHINGTON	← MANUAL PROCEDURE →																						
WEST VIRGINIA	X	X	X	X	X	X	X	S/P-S	S/P-S	S/P-S		ADLT	ADLT	ADLT									
WISCONSIN	X	X	X			X	X	A/P-S	A/P-S	A/P-S									A/P-S				
WYOMING				X	X	X	X								TOTAL								
PUERTO RICO	← MANUAL PROCEDURE →															TOTAL	TOTAL	TOTAL					TOTAL

X - Indicates that the State machine processed data of the type and level indicated in this column.

TOTAL - Indicates that data representing the secondary, post-secondary and adult levels is input in this column.

S or SEC - Indicates that data representing the secondary level only is input in this column.

S or P-SEC - Indicates that data representing the post-secondary level only is input in this column.

A or ADULT - Indicates that data representing the adult level only is input in this column.

MANUAL PROCEDURE - Indicates that the State employed manual processing.

APPENDIX D -- 2

STATE MANAGEMENT INFORMATION PROCESSING, DATA SOURCES & TRANSMITTAL PROCEDURES

	PRIMARY SOURCE OF AUTOMATED DATA INPUT															TRANSMISSION MEDIUM		
	ENROLLMENT DATA				FOLLOW-UP DATA				PERSONNEL DATA				FINANCIAL DATA					
	STUDENT	INSTRUC. PERSONNEL	SCHOOL ADMIN.	DISTRICT ADMIN.	STUDENT	INSTRUC. PERSONNEL	SCHOOL ADMIN.	DISTRICT ADMIN.	INSTRUC. PERSONNEL	SCHOOL ADMIN.	DISTRICT. ADMIN.	STATE ADMIN.	SCHOOL ADMIN.	DISTRICT. ADMIN.	STATE ADMIN.	MANUAL FORM	OP-SCAN FORM	CARD/TAPE
ALABAMA	TOTAL					TOTAL											TOTAL	
ALASKA		SEC														SEC		
ARIZONA	TOTAL				TOTAL											SEC		P-SEC
ARKANSAS		S/P-S				S/P-S				TOTAL			TOTAL			TOTAL		
CALIFORNIA		TOTAL					TOTAL				TOTAL			TOTAL			VARIES	
COLORADO	S/P-S		ADLT		S/P-S		ADLT			ADLT	S/P-S		TOTAL			ADLT		S/P-S
CONNECTICUT	← VARIES FROM SCHOOL TO SCHOOL →															TOTAL		
DELAWARE	← MANUAL PROCESSING →																NOAPP	
DIST. OF COL.	← MANUAL PROCESSING →																NOAPP	
FLORIDA	S/A				S/A				S/A				TOTAL				VARIES	
GEORGIA		B-SEC				P-SEC										P-S		
HAWAII	S/P-S				SEC				S/P-S									S/P-S
IDAHO	← MANUAL PROCESSING →																NOAPP	
ILLINOIS			TOTAL				TOTAL									TOTAL		
INDIANA			TOTAL			TOTAL			TOTAL							TOTAL		
IOWA	TOTAL				S/P-S								SEC				S P-S	
KANSAS		TOTAL				TOTAL			TOTAL				TOTAL			TOTAL		
KENTUCKY	TOTAL					TOTAL			TOTAL				TOTAL			TOTAL		
LOUISIANA	← MANUAL PROCESSING →																NOAPP	
MAINE									SEC								NOAPP	
MARYLAND			TOTAL		TOTAL					TOTAL						S/A	P-S	
MASSACHUSETTS	← VARIES FROM SCHOOL TO SCHOOL →															TOTAL		
MICHIGAN		TOTAL				TOTAL			TOTAL				TOTAL			TOTAL		
MINNESOTA			TOTAL		TOTAL					TOTAL			TOTAL			TOTAL		
MISSISSIPPI			TOTAL			TOTAL				TOTAL					TOTAL	TOTAL		
MISSOURI	TOTAL					TOTAL					TOTAL				TOTAL	S/A		P-S
MONTANA			SEC						TOTAL				TOTAL			TOTAL		
NEBRASKA	← MANUAL PROCESSING →																NOAPP	
NEVADA					SEC												NOAPP	
NEW HAMPSHIRE	← MANUAL PROCESSING →																NOAPP	
NEW JERSEY			SEC													SEC		
NEW MEXICO	TOTAL				VARIES SCHOOL TO SCHOOL										TOTAL	TOTAL		
NEW YORK		TOTAL				TOTAL			TOTAL				TOTAL				TOTAL	
NORTH CAROLINA	P-SEC	SEC				SEC	P-SEC		P-SEC	SEC					S/P-S	TOTAL		
NORTH DAKOTA						TOTAL				TOTAL				TOTAL				
OHIO			TOTAL			TOTAL				TOTAL			TOTAL			TOTAL		
OKLAHOMA	TOTAL				TOTAL				TOTAL				TOTAL			TOTAL		
OREGON		SEC			SEC	P-SEC			SEC						TOTAL	P-SEC		SEC
PENNSYLVANIA	TOTAL				TOTAL				TOTAL						TOTAL		TOTAL	
RHODE ISLAND	TOTAL				TOTAL				TOTAL									
SOUTH CAROLINA		S P-S				S P-S									S P-S			
SOUTH DAKOTA	← MANUAL PROCESSING →																NOAPP	
TENNESSEE	SEC	P-SEC			SEC	P-SEC			S P-S				P-SEC		S F-S		S/P-S	
TEXAS	SEC			A/P-S		SEC			SEC						TOTAL	TOTAL		
UTAH	TOTAL																NOAPP	
VERMONT	← MANUAL PROCESSING →																NOAPP	
VIRGINIA		A/S			A/S												SEC	
WASHINGTON	← MANUAL PROCESSING →																NOAPP	
W. VIRGINIA		S/P-S					S/P-S			S/P-S						S/P-S		
WISCONSIN				P-SEC				P-SEC			P-SEC							S/P-S
WYOMING															TOTAL	TOTAL		
PUERTO RICO	← MANUAL PROCESSING →																NOAPP	

TOTAL - Indicates data representing the secondary, post-secondary and adult levels is collected from the source.

S or SEC - Indicates data representing the secondary level only is collected from the source.

P-S or P-SEC - Indicates data representing the post-secondary level only is collected from the source.

A-ADULT - Indicates data representing the adult level only is collected from the source.

MANUAL PROCEDURE - Indicates that the state employed manual processing.

NOAPP - Indicates that the column(s) are not applicable to a state's operation.

APPENDIX D -- 3

DATA ELEMENTS COLLECTED BY

STATE MIS STUDENT SUBSYSTEMS, 1975-76

	BEGINNING STUDENT FILE										ENDING STUDENT FILE			FOLLOWUP STUDENT FILE					
	COURSE ID NO.	COURSE SECTION ID NO.	SCHOOL ID NO.	STUDENT FILE NO.	SEX	DATE OF BIRTH	GRADE LEVEL	DISADV. & HANDCP.	ETHNIC GROUP	ADDRESS (ZIP)	END OF COURSE SECTION STATUS	STUDENT ACHIEVEMENT	VOCATIONAL CLUB MEMBERSHIP	EMPLOY. STATUS AFTER LEAVING	EMPLOYMENT SATISFACTION	VOC. PREPARATION EVALUATION	EMPLOYABILITY	EARNINGS	EMPLOYER STATUS
ALABAMA	X			X	X		X	X	X	X	X			X					
ALASKA					X		X				X							X	
ARIZONA	X		X	X	X		X		X	X				X					
ARKANSAS	X		X	X	X		X	X	X		X			X					
CALIFORNIA			← NOT APPLICABLE →																
COLORADO	X		X	X	X		X	X	X	X	X			X		X		X	
CONNECTICUT			← NOT APPLICABLE →																
DELAWARE			← MANUAL PROCEDURE →																
DIST. OF COLUMBIA			← MANUAL PROCEDURE →																
FLORIDA	X		X	X	X		X	X	X	X	X			X		X		X	
GEORGIA			← NOT APPLICABLE →																
HAWAII	X	X	X	X	X	X	X			X	X			X					
IDAHO			← MANUAL PROCEDURE →																
ILLINOIS			← NOT APPLICABLE →																
INDIANA			← NOT APPLICABLE →																
IOWA			← NOT APPLICABLE →																
KANSAS	X			X	X		X	X	X		X			X					
KENTUCKY	X		X	X	X	X	X	X	X	X	X	X		X			X	X	
LOUISIANA			← MANUAL PROCEDURE →																
MAINE			← NOT APPLICABLE →																
MARYLAND	X		X	X	X		X	X	X	X	X			X		X		X	
MASSACHUSETTS			← NOT APPLICABLE →																
MICHIGAN			← NOT APPLICABLE →																
MINNESOTA														X					
MISSISSIPPI			← NOT APPLICABLE →																
MISSOURI	X		X	X	X	X	X	X	X	X	X			X					
MONTANA			← NOT APPLICABLE →																
NEBRASKA			← MANUAL PROCEDURE →																
NEVADA														X					
NEW HAMPSHIRE			← MANUAL PROCEDURE →																
NEW JERSEY			← NOT APPLICABLE →																
NEW MEXICO	X		X	X	X		X	X	X					X		X		X	
NEW YORK	X		X	X	X		X	X	X	X				X				X	
NORTH CAROLINA	X		X	X	X	X	X		X		X								
NORTH DAKOTA			← NOT APPLICABLE →																
OHIO			← NOT APPLICABLE →																
OKLAHOMA	X		X	X	X		X	X	X		X			X					
OREGON	X		X	X	X		X	X	X	X	X			X	X	X			
PENNSYLVANIA	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	
RHODE ISLAND	X		X	X	X	X	X	X	X	X	X					X		X	
SOUTH CAROLINA			← NOT APPLICABLE →																
SOUTH DAKOTA			← MANUAL PROCEDURE →																
TENNESSEE	X		X		X	X	X	X	X	X	X			X	X			X	
TEXAS	X		X	X	X		X		X		X		X						
UTAH	X		X	X	X	X	X		X	X									
VERMONT			← MANUAL PROCEDURE →																
VIRGINIA														X		X		X	
WASHINGTON			← MANUAL PROCEDURE →																
WEST VIRGINIA	X	X	X	X	X		X	X	X	X	X			X		X		X	
WISCONSIN	X	X	X	X	X	X		X			X	X	X	X		X		X	
WYOMING			← NOT APPLICABLE →																
PUERTO RICO			← NOT APPLICABLE →																

X- Indicates that the state collects the data item for individual students.

MANUAL PROCEDURE - Indicates that the state employed manual processing.

NOT APPLICABLE - Indicates that the state collected student data on an aggregate basis.

APPENDIX E

DEFINITIONS OF VOCATIONAL EDUCATION TERMS

NASDVE Task Force
Clarence E. Burdette, Chairman

ADMINISTRATION

Means all of those functions, procedures, and techniques employed in planning, organizing, staffing, directing, controlling, and evaluating in accordance with established policies.

ADULT VOCATIONAL EDUCATION

Means a course or courses conducted for persons who have completed or left high school to prepare them to enter, re-enter, or to progress in the work force.

ANCILLARY SERVICES

Means those non-instructional activities, services, and functions carried out to support and improve the quality of vocational education programs.

AREA VOCATIONAL EDUCATION SCHOOL

Means (a) a specialized high school used exclusively or principally for the provision of vocational education to persons who are available to study in preparation for entering the labor market; or (b) a high school providing vocational education in no less than five different occupational fields to persons who are available for study in preparation for entering the labor market; or (c) a technical or vocational school used exclusively or principally for the provision of vocational education to persons who have completed or left high school and who are available for study in preparation for entering the labor market; or (d) the department or division of a junior or community college which provides vocational education in no less than five occupational fields leading to immediate employment but not leading to a baccalaureate degree, if it is available to all residents of the State or an area of the State designated and approved by the State Board. And, as in the case of a school, department, or division described in (c) or (d), it admits as regular students both persons who have completed high school and persons who have left high school.

CAREER EDUCATION

Means a process utilized in both school and community which enables individuals to make choices leading to success in life-long developmental patterns of living, learning, and working. It includes a sequence of educational experiences, throughout all of education, consisting of development of self awareness, career awareness, exploration of options, decision making and preparation in one or more alternatives to achieve the individual's career objective.

COMMUNITY COLLEGE

Means a two-year community based postsecondary institution which has authority to award an associate degree, a diploma, and/or certificate of completion, and which offers comprehensive educational services to the community, and may include: occupationally oriented programs, general education, preparation for transfer to a baccalaureate degree program at a four-year institution, continuing adult education, basic developmental education, and community services.

COMPLETION

Means that statistic which describes individuals, including early leavers, who have achieved their immediate objectives in preparation for entry or progressing in an occupational field and have left the vocational education program.

COOPERATIVE VOCATIONAL EDUCATION

Means an organized method of instruction in a vocational program designed to provide supervised on-the-job training, related vocational instruction, and required academic courses through a written cooperative agreement between the student, school, and employer.

DEVELOPMENT

Means a process of systematic inquiry which results in the creation of and/or improvement in a product, program, or situation.

DISADVANTAGED PERSON

Means that person who is unable to meet the criteria to enter into, or is unable to progress in or to complete a vocational education program because of: academic underachievement; difficulties with the English language; socioeconomic and cultural background which impinges negatively on that person's motivation, attitude, and lack of knowledge of the world of work; and who, therefore, requires a supplemental program, modification of a regular program, or a special service to succeed in a vocational education program.

ENTREPRENEURSHIP

Means a business venture undertaken for profit making on an investment. Such term is identified with the functions of organizing and managing the factors of production and distribution of goods or services. It generally involves innovating and risk bearing.

EXPLORATORY WORK EXPERIENCE PROGRAM

Means a school program designed to provide students with paid or unpaid on-the-job work experiences in a variety of occupations, to help the students identify job traits in relation to their abilities and characterisitics, and to assist them in making realistic and appropriate occupational choices.

GENERAL WORK EXPERIENCE

Means a school supervised program that provides experiences in a work environment to assist students, through part-time employment, to acquire the necessary human relations skills, work attitudes, and common knowledge required for successful employment.

HANDICAPPED PERSON

Means a mentally retarded, hard or hearing, deaf, speech impaired, visually impaired, seriously emotionally disturbed, crippled, or other health impaired person who, by reason of the handicapping condition, requires a special program, program modifications, or supplemental services in order to succeed in a vocational education program.

INDUSTRIAL ARTS

Means those educational programs organized for the development of understanding about all aspects of industry and technology, including learning experiences involving activities such as experimenting, designing, constructing, evaluating, and using tools, machines, materials, and processes, and which may assist individuals in the making of informed and meaningful occupational choices, or may prepare them for entry into advanced trade and industrial or technical education programs.

LOCAL EDUCATION AGENCY

Means a legally constituted public educational institution or agency responsible for operating and administering educational programs.

NONPROFIT SCHOOL

Means a private educational institution established and operated by an organization, from which no part of the net earnings accrues to the benefit of any private shareholder or individual.

NON PUBLIC (PRIVATE) SCHOOL

Means an educational institution established and operated by an individual or by an agency or organization other than a State, a subdivision of a State, or the Federal government, usually supported primarily by other than public funds. The control and operation of the school rests with other than publicly elected or appointed officials.

OCCUPATIONAL EDUCATION

Means any educational program with a direct career relationship. A broad generic term describing vocational education at the postsecondary level but not limited to any particular delivery system.

PARTNERSHIP

Means a type of business organization owned by two or more persons who have, by contract, agreed on the amount of their proportionate ownership in the business, as well as in the profits and liabilities accruing from it.

PERSONS WITH SPECIAL NEEDS

Means those persons who meet the criteria as handicapped or disadvantaged persons who require special programs, modification of programs, or supplemental services to help them succeed in a vocational education program.

POSTSECONDARY AREA VOCATIONAL EDUCATION SCHOOL

Means an area vocational education school, a majority of whose students have left or completed high school.

POSTSECONDARY EDUCATIONAL INSTITUTION

Means an academic, vocational, technical, home study, business, professional, or other school, college or university, or other organization or person offering educational credentials or offering instruction or educational services--primarily to persons who have completed or terminated their secondary education or who are beyond the age of compulsory school attendance--for attainment of educational, professional, or vocational objectives.

POSTSECONDARY VOCATIONAL EDUCATION

Means vocational education conducted for youth or adults who have completed or left high school and who are enrolled in an organized program of study in preparation for entering or progressing in the labor market.

PREPARATORY VOCATIONAL EDUCATION

Means education, training, or retraining in a vocation or within an occupational cluster in which a marketable skill is acquired for entry or reentry into the labor market.

PREVOCATIONAL EDUCATION

Means programs, services, or activities designed to provide youth and adults with orientation, guidance, exploration, and instruction to assist them in making meaningful career decisions and planning an appropriate vocational education program.

PREVOCATIONAL STUDENT

Means a person enrolled in a prevocational education program for the purpose of gaining information or experiences which will assist in making a vocational choice.

PROPRIETARY SCHOOL

Means a private educational institution established and operated by an individual, agency, or organization for profit.

PROPRIETORSHIP

Means an enterprise owned by one or more individuals, or an organization, who assume the profits and liabilities accruing from it.

RACIAL/ETHNIC CATEGORIES

Means:

American Indian or Alaskan Native - a person having origins in any of the original peoples of North America.

Asian or Pacific Islander - a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Pacific Islands. This area includes, for example, China, Japan, Korea, the Philippine Islands, and Samoa.

Black, not of Hispanic Origin - a person having origins in any of the black racial groups.

Hispanic - a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish Culture or origin, regardless of race.

White, not of Hispanic Origin - a person having origins in any of the original peoples of Europe, North Africa, the Middle East, or the Indian subcontinent.

RESEARCH

Means a formal, intensive and systematic investigation which employs the scientific or problem-solving method and is directed toward the identification, clarification, and/or resolution of a problem.

RESIDENTIAL SCHOOL

Means an educational institution in which students are provided education programs and are offered board and lodging in facilities owned or leased by the institution.

SECONDARY AREA VOCATIONAL EDUCATION SCHOOL

Means an area vocational education school, a majority of whose students have not received a diploma or certificate indicating completion of their secondary school education.

SECONDARY VOCATIONAL EDUCATION

Means vocational education provided to students who are in grades 7 through 12.

STATE BOARD OF VOCATIONAL EDUCATION

Means the single State educational agency designated or created under State law which is responsible for statewide policy, planning, administration, and supervision of the administration of vocational education programs at all levels.

STATE EDUCATION AGENCIES

Means those organizations responsible for the administration of education and/or supervision of the specified educational program responsibilities of the local education agencies in the State.

STATE PLAN

Means the description of the State educational efforts to administer, maintain, expand, and strengthen existing vocational education programs and to develop new programs.

SUPERVISION

Means those functions of technical assistance which coordinate and evaluate the activities of individuals to assure that action is taking place in accordance with plans and activities.

SUPPLEMENTARY VOCATIONAL EDUCATION

Means education and training to increase the skills, understandings, and appreciations needed by workers already in an occupation to upgrade or update their occupational competencies.

TECHNICAL INSTITUTE

Means an institution which offers both practical and substantially theoretical education which leads to qualification for work as a technician.

VOCATIONAL EDUCATION

Means organized educational programs, services, and activities which are directly related to the preparation of individuals for paid or unpaid employment, or for additional preparation for a career requiring other than a baccalaureate or advanced degree.

VOCATIONAL PROGRAM

Means an educational plan under which action can be taken by an individual to achieve a vocational objective.

VOCATIONAL STUDENT

Means an individual with a vocational objective enrolled in a vocational education program leading to entry or progress in a chosen occupational field.

VOCATIONAL STUDENT ORGANIZATIONS

Means organizations for students enrolled in, or who have been enrolled in, vocational education programs, with National, State, and local units, the activities of which are an integral part of the instructional program.

WORK STUDY PROGRAM

Means a school program designed to provide financial assistance through part-time employment in nonprofit agencies for students who require such aid in order to enter or continue their education and training in a vocational education program. The part-time employment may or may not be related to the student's occupational objective or vocational program.

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